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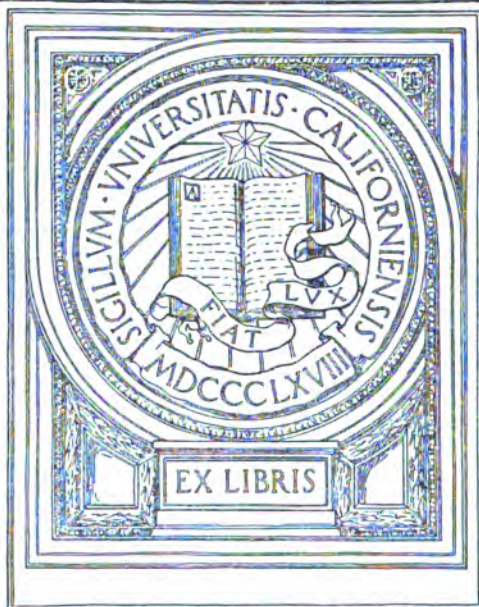
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National Homoeopathic Clinic Day At Hahnemann Hospital and College

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We are enabled to present the following series of Clinics with the compliments of the various lecturers. Each article has been thoroughly edited by its author from notes. Unnecessary verbiage has been eliminated. The conversational or clinic style has been preserved. The order of presentation follows the programme of the day.

CLINIC OF G. HARLAN WELLS, M.D.

ATROPHIC CIRRHOSIS OF THE LIVER AND GALL STONES.

**Differential Diagnosis of the Common Causes of Ascites.
Importance of the Early Diagnosis of Cirrhosis of the Liver
from the Therapeutic Standpoint. The Homœopathic Treat-
ment of Cirrhosis of the Liver.**

THE first patient that I desire to bring to your attention today is an example of a group of cases frequently met with in general practice and is especially interesting because of the diagnostic and therapeutic problems it presents. Fortunately for you, and perhaps unfortunately for me, you will have the opportunity of witnessing an abdominal operation on this patient after the close of this clinic, which will enable us to verify or disprove our diagnostic conclusions.

The history of the case is as follows: The patient was admitted to the hospital on October 15, 1920, and complained of considerable flatulence and attacks of vomiting.

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Family History.—Father died at 67, of unknown cause. Mother died of Bright's disease at 56. One brother died of pneumonia at 35. Has two brothers and one sister living and well.

Personal History.—Mumps, measles, scarlet-fever and varioloid during childhood. In early adult life he had an attack of gonorrhoea and a venereal sore which was diagnosed as chancroid. The patient has led a sedentary life. Drinks two cups of coffee and one of tea daily. Since eighteen years of age has taken from two to four glasses of beer daily and at irregular intervals takes whiskey to excess.

Present Illness.—The present illness started two years ago with dull pain in the right hypochondriac region which gradually became sharp and radiated to the left scapular region. The patient was decidedly nauseated and later vomited undigested food, which was mixed with a brown, slimy substance. The pain was better after vomiting. The attack lasted two days. Since that time has had five similar attacks, some of which have been quite severe. In one of these attacks the patient became jaundiced. Five weeks ago he was taken with a severe attack of pain in the right hypochondriac region, accompanied by nausea, vomiting and jaundice. Since then the patient has suffered from more or less persistent nausea and a sense of weight in the epigastric region. On the 9th of October his physician called his attention to the fact that his legs were edematous and that his abdomen was swollen. On the afternoon of October 9th, he had an attack of vomiting lasting about half an hour. The vomited matter contained clots of dark blood. The following day the patient passed a black, tarry stool.

The Physical Examination.—Shows the patient to be well developed, somewhat anemic, no evidence of jaundice at the present time. The tongue is coated white, the gums and teeth are in good condition. The abdomen is considerably enlarged and tense. There is a tympanitic note in the upper portion of the abdomen extending down to the umbilicus. The lower and lateral regions give a flat note. The area of tympany and dullness immediately change if the patient is placed on one side or the other. A distinct fluctuating wave is presented. No tenderness is present over the liver or over the gall-bladder.

The heart is normal in size, and position. No valvular lesion could be detected and the muscle tone of the heart is

fairly good. The pulse is regular, 80 per minute. The walls of the arteries are soft. Blood pressure systolic 120, diastolic, 70.

The Blood Examination showed the following:

Hemoglobin50 per cent.
 Red Cells2,840,000.
 White Cells4,550.
 Wassermann test was negative.

The Urine Analysis gave the following result:

AppearanceClear.
 ColorAmber.
 Specific Gravity10.25.
 ReactionAcid.
 AlbuminSmall Amount Present.
 SugarPresent.
 AcetonePresent.
 PusPresent in Small Amount.
 CastsAbsent.

If we analyze the subjective symptoms and the objective phenomena presented by this patient we observe that they can be divided into groups:

First.—Attacks of severe pain in the right hypochondriac region accompanied by vomiting and at times by jaundice

Second.—The presence of free fluid in the abdominal cavity, not associated with tenderness or a rise of temperature.

Dr. Wells: Is it possible for a single disease to produce this entire symptom complex or must we assume that more than one pathological process is present?

Student: It might be possible for carcinoma involving the liver and gall-ducts to produce such symptoms, but it would seem more probable that more than one pathological lesion exists.

Dr. Wells: The latter view is undoubtedly correct. The first group of symptoms, namely the paroxysmal attacks of pain in the right hypochondriac region, accompanied by vomiting, and at times by jaundice, is strongly indicative of the presence of cholecystitis, probably accompanied by gall-stones.

With that thought in view the radiographic examina-

tion was made of the gall bladder, concerning which the Roentgenologist gave the following report:

"Roentgenograms made of the gall bladder in the prone position shows the presence of at least twelve fairly hard stones in the gall bladder."

You will observe in the negative which I shall pass around, several distinct shadows in the region of the gall bladder which are undoubtedly due to gall stones.

The second group of phenomena, namely, the signs indicative of free fluid in the abdominal cavity, not associated with tenderness and without a rise in temperature, is obviously not due to the presence of gall stones, and which must be explained in some other way. When you take into consideration the fact that the patient is past middle life, that he has a history of a long-continued use of alcohol, that the liver is not enlarged and that there is no evidence of cardiac, vascular or renal disease, I think we are safe in assuming that the ascites is due to an atrophic cirrhosis of the liver.

Ascites sooner or later occurs in practically all cases of atrophic cirrhosis of the liver. Cabot found this symptom in 88 per cent. of all cases of hepatic cirrhosis in the Massachusetts General Hospital. As a rule, it is not an early symptom and the disease frequently exists for several years before ascites develops. The pre-ascitic symptoms of cirrhosis of the liver are: flatulence, indigestion, constipation and tenderness on pressure over the liver. At this time the liver is usually slightly enlarged. The occurrence of this group of symptoms in a patient who has had syphilis or who is addicted to the use of alcohol, always calls for prompt and energetic treatment, as it is in this stage only that we can hope to stay the progress of the disease. Gradually the development of connective tissue leads to obstruction of the portal circulation and irritation of the capsule of the liver, the result being the development of ascites. During the post-ascitic stage the digestive disturbances are quite marked, hemorrhages from the stomach and intestines are common and the liver is usually small in size. As a result of portal obstruction hemorrhoids are quite common and in some cases the distention of the veins in the walls of the abdomen may result in the development of the classical caput-medusæ.

The Differential Diagnosis of Ascites due to cirrhosis of the liver from that due to other causes is at times attended

with considerable difficulty. It will help us very materially, however, if we bear in mind the fact that the cause of ascites in 90 per cent. of all cases is one of five diseases: Cardiac weakness, malignant growths, nephritis, cirrhosis of the liver, tuberculous peritonitis. Cabot, in a post-mortem study of 224 cases of ascites, gives the following results:

Cardiac Weakness	89	} 197 or 88%
Neoplastic Peritonitis	44	
Renal Disease	26	
Cirrhosis of Liver	23	
Peritoneal Tuberculosis	15	

Occasionally ascites will develop in connection with thrombosis of the portal vein, or as a result of irritation of the peritoneum by uterine or ovarian growths. Bearing in mind, then, the five important pathological processes above mentioned, we are usually justified in concluding that if the examination of the heart and urine is negative, and there is no tenderness to pressure over the abdomen that we are dealing with a case of hepatic cirrhosis. If the patient is past forty years of age and gives an alcoholic history this probability becomes almost a certainty.

Let me urge upon you the importance of recognizing the development of atrophic cirrhosis of the liver in the early pre-ascitic stage. At this time, by proper dietetic and medicinal methods, much can be done, both to prevent any further development of the disease and to prolong the life of the patient.

Dietetic measures are of paramount importance. Alcoholic liquors in all forms should be stopped at once. Strong spices and condiments should be forbidden. Meat should be taken once a day and emphasis should be placed upon milk, cereals, fruits and vegetables as the most suitable articles of diet. Water should be taken freely, about ten glasses daily.

The medicinal agents constitute a prominent part of the treatment. A Wassermann test should always be made and if the patient is syphilitic, arsphenamine, mercury and potassium iodide should be used in accordance with their well-known indications. The indicated homœopathic remedy occupies an important place in the treatment of cirrhosis of the liver. Personally, I have had the best results in the early stages from *nux vomica*, *hydrastis*, *chelidonium* and *lycopodium*. In the more advanced stage of the disease *carbo. veg.*,

iodide of gold, iodide of arsenic, lycopodium and sulphur are helpful. For the removal of the ascitic fluid apocynum, 20 drops of the tincture four or five times daily is frequently very effective. Occasionally theobromine with sodium acetate, 5 grains every two hours, will remove the fluid. If the above measures fail to give relief and the accumulation of fluid is excessive, tapping of the abdomen must be resorted to and frequently must be repeated several times.

The patient was operated on by Dr. Herbert L. Northrop a few hours after being presented in clinic, and the following conditions discovered:

The abdomen contained a large quantity of clear serous fluid.

The liver was small and covered with the minute elevations characteristic of atrophic cirrhosis of the liver.

The gall bladder was opened and contained nine gall stones, three of which were moderately large and six were quite small. All the stones were removed except one, which could not be removed except with great difficulty and the general condition of the patient did not warrant prolongation of the operation.

The patient developed a toxic state following the operation and died on October 25th of acute uremia.

CLINIC OF C. SIGMUND RAUE, M.D.

ANEMIA IN CHILDREN.

CASE I.—ANEMIA INFANTUM.—The first case which I have to show you is an infant 13 months old presenting an interesting clinical condition, namely, enlargement of the spleen. Since there are a number of diseases in which enlargement of the spleen may occur it is important that we obtain an accurate history of this case and make a thorough physical examination of the infant. I will first read you the history which was obtained in the dispensary and recorded at the time the patient was first brought to the hospital.

Joseph V., Italian, aet. 8 months. Date, April 12, 1920.

Family History.—Two other children died in infancy, one at 13 months and one at 19 months with an abdominal tumor.

Personal History.—Normal labor; full term; breast-fed and still nursing. Baby was well until one month ago when it began to get pale and the abdomen enlarged; a tumor was detected by the mother in the left side of the abdomen last week.

Physical Examination.—The child is moderately well nourished, mentally bright, skin shows marked waxy pallor; mucous membranes have a washed-out appearance; bloodless. The abdomen is prominent in the left lateral region and a tumor, extending from the lower border of the ribs down to the umbilicus is distinctly palpable. The tumor moves with respirations, is hard and smooth and has a sharp edge. It lies immediately beneath the abdominal wall in front of the intestines. There is no difficulty in identifying the tumor as an enlarged spleen.

The liver is slightly enlarged, reaching one inch below the rib-border. The infant has two teeth and presents a slight rachitic rosary. Weight, 14 pounds, 6 ounces.

Blood Examination.—Hb., 40 per cent. Red cells, 3,000,000. White cells, 15,000. No myelocytes found.

Since the above blood examination was made there has been a gradual fall in the leucocytes, the last count showing 5,600 with the following differential count:

Lymphocytes, 30 per cent.; large mononuclears, 4 per cent.; polynuclears, 63 per cent.; eosinophiles, 2 per cent.; no myelocytes observed.

The chief clinical feature of this case is the anemia. This is evidently primary in type, as no adequate cause for the same can be found. There appears to be a strong hereditary factor, judging from the history of the death of two previous children with evidently an enlarged spleen. The presence of enlargement of the spleen suggests the possibility of syphilis or leukemia.

Syphilis is excluded by the absence of any skin or mucous membrane manifestations of this disease; I also want to inform you that a Wassermann test was made and found negative.

Leukemia is excluded by the low leucocyte count and the absence of myelocytes in the blood. Hodgkin's disease, or pseudoleukemia can be excluded because of the absence of the characteristic enlargement of the lymph nodes found in this disease. Furthermore, Hodgkin's disease is extremely rare in infancy. There remains for our consideration the disease

known as pseudoleukemia infantum which was first described by Von Jaksch in 1889, who thought it to be an infantile form of Hodgkin's disease, or pseudoleukemia. It has not been definitely determined that anemia infantum pseudoleukemia is a primary anemia and a definite disease entity but for practical purposes this diagnosis is useful in classifying a group of anemias with enlargement of the spleen and the blood findings above recorded.

CASE II.—CONGENITAL SYPHILIS WITH ANEMIA AND ENLARGEMENT OF THE SPLEEN.—I will now show you another infant presenting an enlarged spleen together with a pallor suggesting an anemia. In this case you will, however, at once be struck with the presence of cutaneous lesions suggesting a rational explanation for these symptoms. The history is as follows:

Violet Q., aet. 6 months. First child. No previous miscarriages. Full term, weighed 7 pounds at birth. Present weight 9½ pounds. Artificially fed. Shortly after birth the baby developed snuffles. This was followed by a skin eruption, consisting of a macular rash on the face and extremities. Papules and pustules also developed. Linear ulcers developed at the angle of the mouth and mucous patches appeared about the anus. A Wassermann test, made at that time at another hospital was 4 plus positive. The baby was given two intravenous injections of neosalvarsan of .05 gms. each and this was followed by mercurial inunctions. Under this treatment prompt improvement in the child's condition set in and at the present time there are only a few papulosquamous skin lesions remaining. The spleen, however, is still palpable and the child is underweight and anemic. The pallor is, however, not nearly as marked as it was earlier in the case. Many cases of congenital syphilis do not show as marked cutaneous manifestations as this case showed but present chiefly the malnutrition and anemia resulting from the syphilitic infection. The spleen is usually enlarged in these cases.

Whenever you detect splenic enlargement in an infant under three months of age you should at once suspect congenital syphilis. Enlargement of the spleen occurs in other infections, notably in tuberculosis, but tuberculosis is rarely seen before the third month and not commonly as early as that time. In rickets splenic enlargement is frequently observed, but this does not develop until the infant is about a year old.

There is, therefore, no disease excepting syphilis which produces enlargement of the spleen in the first months of life, excepting septic infection of the newborn, and here the symptoms of sepsis overshadow all other clinical manifestations.

The early recognition and diagnosis of congenital syphilis is most important, not only because the infant's life may depend upon the prompt institution of anti-syphilitic treatment but also because of its contagious nature to those who must take care of it. Fortunately the mother runs no risk; even though she may not show any clinical evidence of syphilis, she may nurse her infant with impunity. This immunity, however, means infection and the majority of mothers of syphilitic infants give a positive Wassermann reaction. If we are acquainted with the characteristic symptoms of the disease and know the order in which the various manifestations appear we should have no difficulty in diagnosing syphilis, no matter whether we see the case early or late.

The following conditions, occurring in the order named, are the characteristic manifestations of congenital syphilis:

Pemphigus—Which may develop in the fetus during the sixth or seventh month. It is, therefore, usually present at birth, and represents the earliest clinical manifestations of syphilis. The lesions consist of bullae about one centimeter in diameter, situated upon the palms of the hands and soles of the feet. The epidermis is loosened from the true skin and has a bleached macerated appearance. While the bullae are intact they contain a yellowish fluid. The bullae soon dry up and the epidermis falls away, leaving a raw copper colored surface.

Coryza—Is one of the most constant manifestations of syphilis. It develops shortly after birth, that is, during the first three weeks. At times it is the only symptom present, the child appearing to be in good health otherwise.

The earliest manifestations are a serous nasal discharge which later becomes sero-purulent. The nose is obstructed and the infant's respirations become noisy and embarrassed. The discharge is irritating and leads to erosion of the skin about the nares and mouth with the development of fissures in these localities.

Cutaneous Syphilides appear shortly after the coryza. They consist of pink, oval macules more or less general in distribution. At the end of a few days they become copper

colored and desquamate. Wherever these papules are exposed to moisture, especially about the buttocks and about the mouth their surface becomes macerated and they increase in size and become converted into ulcers and fissures.

If the infant does not receive prompt medical attention it soon loses weight, becomes anemic and develops a characteristic grayish yellow color—*le teint café au lait*—due to anemia and profound hepatic disturbance. The liver and spleen are usually enlarged. A hemorrhagic tendency may be present. Death from marasmus usually supervenes. If, however, the early stages are benign in character or have been controlled by treatment, but not entirely eradicated, there may develop later such manifestations as *epiphysitis*, *meningitis*, *hydrocephalus* and *interstitial keratitis*.

The early recognition of hereditary syphilis and early institution of specific treatment influences materially the prognosis. In the majority of instances prompt improvement is noted from the administration of mercury either by mouth or by inunction. The latter method is preferable since it does not induce diarrhoea and since it acts quicker. Ten grains of unguentum hydrargyrum daily until the symptoms have been controlled. The inunction may be discontinued for several weeks and then resumed for several weeks, keeping the child under treatment for at least a year. During the remissions in the mercurial treatment, potassium iodide may be given for the visceral lesions which are always present in these cases.

Cases which do not promptly respond to mercurial treatment, or in the more severe cases presenting such conditions as destructive changes in the nasal septum, rapidly progressing inanition, involvement of the eyes or of the nervous system, recourse should be had to the more quickly acting arsenical preparations. Neo-salvarsan is the best one of these because it is least toxic and irritating and may be given intramuscularly in oil.

The best results, however, are obtained by giving it intravenously. The superior longitudinal sinus has recently become the accepted route for the administration of salvarsan in infants. Helmholz, of Chicago, in 1915, called attention to the clinical practicability of this route. Dunn and Howell, of Boston, successfully used the sinus for obtaining blood for the Wassermann reaction and later gave salvarsan injections into the sinus.

As soon as the urgent symptoms have been controlled mercurial treatment should be resumed. The Wassermann reaction may be employed in order to control the treatment, but it must be remembered that the reaction is often absent in syphilitic infants during the first month.

LETHARGIC ENCEPHALITIS.

N. C., aet. 19 months. Nursed until $7\frac{1}{2}$ months old, no difficulty in weaning him. No previous illness. Ten weeks ago was taken ill with fever, vomiting and headache. The vomiting subsided but he continued to show signs of fever and became extremely irritable, cried day and night, apparently with headache, and developed gradually increasing stupor. Was first seen by me September 21st. At that time had a temperature of 102.4 degrees by rectum; was in a stupor; respirations were of Cheyne-Stokes type; pulse rapid; abdomen retracted; knee-jerks increased; Kernig sign not well developed. Babinski in left foot. The next day paralysis of the left leg set in which was shortly followed by paralysis of the left arm and lower face. Admitted to hospital 10/5/20.

Physical Examination.—Child is emaciated; semi-stuporous; eyes and cranial nerves not involved; eye-grounds normal. Left sided hemiplegia with exaggerated tendon reflexes and Babinski sign in the left foot.

Blood Examination.—White cell count, 13,200; differential count shows an abnormal increase of polynuclear cells.

Lumbar Puncture.—The fluid contains free blood probably the result of traumatism from the needle. A culture made from the fluid was negative; no tubercle bacilli were found. The Wassermann reaction was negative. No change in the child's condition took place until after the second lumbar puncture on the 9th. At this time the fluid was straw-colored but contained no free blood. The cell count was 15; globulin increased; reduction of Fehling's test positive; no tubercle bacilli present. Following the puncture the child began to move the left leg and the next day recovered the use of his arm. There was a progressive improvement in the hemiplegia as well as in the mental condition.

On the 13th a third lumbar puncture was made because of a return of the cerebral irritability. The fluid escaped under pressure but it was entirely clear. Improvement again

set in and has steadily continued. A leucocyte count made at the time of the last puncture showed a fall in the leucocytosis the cell count being 10,000.

This case is of unusual interest because of its gradual onset, early vomiting and slow development of the paralytic symptoms, all suggesting tuberculous meningitis. In fact, this is the tentative early diagnosis which was made in the case and an unfavorable prognosis was given. It is also unusual in that the child has made a complete recovery from a hemiplegia in so short a time together with a complete clearing up of the signs of cerebral effusion.

Tubercular meningitis could be eliminated when the long duration of the condition became apparent and the lumbar puncture findings served to corroborate this conclusion, namely, the low cell count, the positive reduction of Fehling's solution and the absence of tubercle bacilli.

There are no symptoms suggestive of *cerebrospinal meningitis*. The *cerebral form of poliomyelitis*, or *polioencephalitis* must, however, be considered in the differential diagnosis. In *poliomyelitis* the onset is sudden; paralysis develops within the first forty-eight hours; the symptoms are more stormy and the cerebrospinal fluid shows a higher cell count.

Acute encephalitis occurs as a complication of some acute infectious disease, such as one of the exanthemata or after influenza. This condition begins with fever, vomiting, sometimes convulsions, and paralysis, usually hemiplegic in type, develops in the course of several days after the onset. Many cases clear up as this case has done. There is no evidence, however, of a preceding infection in the present case. It has developed as a primary condition and fits better into the category of the type of encephalitis which has been observed occurring epidemically during the past six years and which has been named "lethargic encephalitis." The majority of cases of lethargic encephalitis have presented cranial nerve paralysis, usually affecting the innervation of the eye muscles, although other clinical types of encephalitis have been reported. In children, cranial nerve involvement has not been found as common as in adults and the course, as a rule, has been shorter. The etiology is still unknown.

CLINIC OF G. MORRIS GOLDEN, M.D.

PNEUMOTHORAX.

I WISH to present to you gentlemen today, several cases of pneumothorax. A clinical condition which is not at all uncommon but yet frequently overlooked, although the physical signs upon which a diagnosis rests are classical and occur in few other conditions for which it may be confounded. I will present the histories and physical findings of our cases and from a resume of these facts you will see that we have a logical basis for our diagnosis, following—we will discuss the clinical phase of the condition and its physical signs, or in other words the facts upon which a diagnosis may be based.

CASE I.—Mr. T. A. is single; occupation, cook. Family history: Mother dead, cause unknown; father living and well. He has two sisters, living and well; one brother dead, as a result of cardiac disease.

Personal History.—Had the ordinary diseases of childhood, not followed by any complications. About six months ago he developed a cough. Two months later he fell, striking his left side in the axillary line at about the ninth rib. Following this he was apparently well up until the present illness.

History of Present Illness.—The patient dates his illness to a cold which he contracted about six weeks ago. This has grown in severity associated with moderate fever, loss of weight and exhaustion. One month ago, blood spitting evidenced itself, and has recurred at several intervals up to the present time. One week previous to his admittance to the hospital he was seized with sharp cutting pains in the left side of the chest, in the axillary line, marked dyspnoea, rapid, feeble pulse, cough bloody expectoration and a semi-collapsic state. Upon his admittance, temperature 101, pulse 130, respirations 40 and the symptoms present as noted above.

Physical Examination.—Left side of chest shows moderate bulging. Tactile fremitus and vocal fremitus, are diminished from third rib downward, and at dependant portions is absent. Percussion reveals a tympanic note, high in pitch and woody in character over the entire left side of the chest. Auscultation reveals marked suppression of the respiratory murmur and at base absent. At the level of the third rib distinct amphoric breathing may be heard. The coin sound is positive.

Metallic tinkling absent. A succussion splash can be heard distinctly. An examination of the cardiac dullness shows an absence of same to left of sternum. The apex beat is located apparently in the fifth space upon the right side, and dullness extends almost three inches to the right of the sternum, evidencing to us a distinct displacement of the heart to the right. The X-ray findings corroborate those of the physical signs, showing distinctly the presence of a pneumothorax upon the left side with effusion, and the displacement of the heart to the right. Further study of the X-ray shows the presence of a tubercular process involving the left side of the chest. This has been substantiated by an examination of the sputum which reveals the presence of numerous tubercular bacilli. A white blood count shows a leucocytosis of 10,000. Urinary examination negative.

CASE 2.—Mr. P., single; age, 12; occupation, schoolboy.

Family History.—Mother and father both living and well. One sister living and well. No history of tuberculosis.

Personal History.—Whooping cough, measles and chicken-pox, otherwise was never ill until present condition.

History of Present Illness.—Was apparently well until one week ago when developed shortness of breath, slight pain in the left side of chest. No temperature. The dyspnoea was practically the only symptom of which he complained, and only a few days previous this little fellow was out watching a football game. Upon admittance to the hospital, complained of slight pain in left side of chest with sense of oppression whereby he could not lie flat without a sense of suffocation. His skin was rather cold and clammy; temperature 100; pulse 110; respiration 38.

Physical Examination.—Inspection reveals prominence with restricted motion of left side of chest. Apex beat is seen in fifth space upon the right side. On further examination the heart shows practically a complete transposition to the right side. Palpation reveals a diminution of the tactile fremitus. On percussion the left side of the chest reveals a low pitched tympanitic note increasing from above downward. Upon auscultation marked diminution of the respiratory murmur is obtainable and at a level of the fourth and fifth ribs is heard a distinct band of amphoric breathing. Metallic tinkling and coin sound are absent. A succussion splash may be distinctly heard upon shaking the patient and auscultating the

chest at the same time; in fact, this sign is so marked that it may be discerned by the patient.

An X-ray examination you will see from the plate which I show you, reveals distinct evidences of air and fluid in the left side of the chest with almost complete transposition of the heart to the right side. Hence from a study of the clinical history of these cases, coupled with the physical findings which are so characteristic, a diagnosis of pneumothorax, or, if you please, hydro-pneumothorax, I think you will all agree is a logical deduction. Let us now consider the clinical factors in relation to pneumothorax. While the term pneumothorax literally means air in the pleural cavity the occurrence of this alone for any length of time is rare, for the greater majority of them, or, we may say, all of them eventually develop an effusion which is most often serous, or, it may become purulent. The presence of pneumothorax is, no doubt, more frequent than is recognized. It is most likely in early adult life from the ages of 20 to 30, more frequent in males and has been said to show a greater tendency to involve the left side, in a proportion from 2 to 1. While other observers state that the right side is most frequently involved, from my observation it has been found most frequently upon the left side. As a causative factor tuberculosis stands pre-eminent; it may be safely said that not less than 30 per cent. are associated with tuberculosis of the lung and other statistics shows that as high as 75 to 90 per cent. are tubercular. As a complication of tuberculosis it can be shown that it occurs in from 5 to 10 per cent. of cases. It is most frequently found in the acute cases, that is, in the early stages, 55 per cent. or more occur during the first year when softening or caseation is going on, and much less frequent in the later stages and arrested tuberculosis due to fibrosis and adhesions.

Traumatism often plays a part, especially if associated with a perforating wound of the chest. It may also arise as the result of other pulmonary lesions, namely, gangrene, abscess bronchiectasis, hemorrhagic, infarct, rupture of emphysematous blebs. In rare instances the lesion of a neighboring organ by extension may produce the condition; namely, malignant disease of the stomach, esophagus or abscess of the liver. It may be seen that the great majority of cases of pneumothorax are the result of disease of the lung and notably that of tuberculosis.

The location of the lesion is usually found in that portion of the lung where disease is most active, hence it is most frequently found at the base of upper or lower lobes and seldom at the apex, due to the fact of the presence of fibrosis and adhesions, which are so commonly found in this locality.

From a clinical standpoint pneumothorax may be divided into the open type in which the tear in the lung remains patulous and the amount of air gradually increases; secondly, the closed type in which the amount of air remains stationary and the physical signs show no change. Third, the valvular type in which the air is permitted to enter during inspiration and as the respiratory movement is reversed the valve closes so that no air can escape; as a result air accumulates in the pleural cavity under distinct pressure.

A further clinical sub-division has been made upon the basis of the amount of collapse of the lung. This has been divided in what has been termed a true pneumothorax in which the whole pleural cavity becomes an air chamber with the lung compressed at its respective apex. Secondly, a localized pneumothorax, a type in which due to the lung being bound down by adhesions only a partial collapse of a portion of one or more lobes takes place. This form may at times be interlobar as regards its location. A clinical type commonly met with is that of the spontaneous variety which apparently occurs in healthy individuals, frequently following some exertion as lifting, reaching, coughing, vomiting and sneezing. While these subjects may appear healthy, yet, it is logical to suppose that such incidents cannot be associated with healthy lung tissue and are probably due to the tearing away of a pleuritic adhesion, as the result of a sub-pleural tuberculosis. The symptomology differs according to the onset, whether sudden or insidious. Seventy-five per cent. have been shown to be sudden in onset which is actually characterized with severe pain upon the affected side referred to as the costal margin, difficult breathing rapidly develops and becomes extreme and associated with a sense of suffocation. The patient is pale, cyanotic, anxious expression, pulse rapid and weak, sub-normal temperature, with cold sweat; in other words, every evidence of severe shock and collapse. Of the insidious onset, which comprise 25 per cent. of the cases, the symptoms which characterize the sudden onset are frequently entirely lacking, or they may be so trivial as to escape observation. The character-

istic symptoms are chest pain, dyspnoea and rapid pulse, and are always present in varying degree, but are so frequently massed by the primary disease of the lung that their significance in relation to pneumothorax does not attract attention, whereby pneumothorax is often discovered accidentally by physical signs or by an X-ray examination. Hence, it is apparent that it may develop without symptoms or those that are so trivial in character as to escape notice, whereby it can be seen that the symptomology of the insidious onset is distinctly lacking, while the clinical picture as outlined in that of sudden onset, especially occurring in a tubercular subject, should suggest the possibility of a pneumothorax. A diagnosis must rest upon the physical signs.

Physical Signs.—Of these auscultation and percussion are the most important and helpful. Many of the supposed pathognomonic signs are not always present nor are they constant features, the signs being modified by pre-existing physical conditions. In considering the signs that may be looked upon as pathognomonic of the condition that of succussion splash is of great value, for its presence can only take place where fluid and air are contained in the same cavity, hence its presence is proof positive of a pneumothorax and the only point to decide is whether the sound has its origin in the pleural sac.

The value of this sign may be estimated by the fact that it occurs in about 78 per cent. of cases.

The coin sound or what has been termed the Bruit d'Ar-ian is of value. It is a common phenomenon in pneumothorax and reliable, occurring in as high as 90 per cent. of cases as recorded by certain observers. Metallic tinkling if elicited is a most trustworthy sign, but its presence is not encountered as often as the two foregoing signs just described. In association with these signs auscultation will always show the breath sound to be absent or very distant. They may be of any character but the presence of an amphoric breathing is very suggestive of pneumothorax when heard over the middle lower portion of the chest. As a rule, vocal fremitus and vocal resonance are diminished in intensity or very faint and at times may be absent, occasionally an amphoric quality may show itself. The percussion note will be found to be variable, this depending upon the amount of air retained and its tension. As a rule it is tympanitic in quality, but if, under high tension, this will give rise to a high pitched woody tympany which

closely resembles dullness. This type of a percussion note is of extreme value, occurring in over 80 per cent. of the cases. Inspection usually reveals bulging of the affected side with limited motion. Displacement of the apex beat to the right is characteristic of a left-sided pneumothorax while upon the right side a downward displacement of the liver will occur and in no other condition is the displacement of either the heart or liver so marked as in pneumothorax.

If such physical signs are found in which the history or clinical manifestations of the case suggest a pulmonary condition, a pneumothorax should be sought for. Lastly, palpation reveals signs that are not uniform. Usually tactile and vocal fremitus are diminished and at times absent. If the lung is bound down by adhesions and unable to retract fremitus may be unaltered and at times exaggerated.

The X-ray examination is of great value in making a diagnosis to corroborate the presence of a pneumothorax where our physical signs have suggested its presence. Its greatest value is in those cases of partial pneumothorax where the classical physical signs are absent and the presence of the condition escapes detection until revealed by the X-ray.

In relation to the presence of these small localized or partial types of pneumothorax, certain observers have shown that these have been mistaken for pulmonary cavities. Some roentgenologists have claimed to have seen small cavities entirely disappear; no doubt these have been instances of a small localized pneumothorax.

In a consideration of the differential diagnosis the condition is most likely to be mistaken for pleurisy with effusion on account of the fact that all cases of pneumothorax develop an effusion sooner or later. A large pulmonary cavity is quite capable of producing even the classical physical signs of pneumothorax. Some observers have claimed that it may be confused with an advanced emphysema.

The treatment must be based upon the physical condition present with the symptomology. In those cases of sudden onset with severe pain, dyspnoea and evidence of collapse, the use of morphine is strongly indicated, to control the cough, pain and excessive movement of the chest, thereby hoping to seal the opening, if possible, or in other words, to splint the lung.

Stimulants will often be indicated at this stage to over-

come collapse and cardiac weakness. If the symptoms become very acute with the evidence of marked intra thoracic tension a parcentesis of the affected side should be done by the introduction of a trochar to allow the air to escape and minimize the pressure. The trochar may be left in place, if necessity demands it. Others have advised a strapping of the affected side by adhesive plaster to immobilize the affected lung.

Remedies are of little value in this stage of the condition. Later as effusion develops, the treatment resolves itself into the care of pleural effusion, with which subject you are all familiar and will not take the time to consider it at this point. Many cases go unrecognized, they must go untreated, and the average case without urgent symptoms needs little treatment and usually is cared for by nature in an admirable way with attention to the underlying cause which is most frequently tubercular and care along these lines usually gives results that are satisfactory.

CLINIC OF CLARENCE BARTLETT, M.D.

NEURO-SYPHILIS.

Case I—Primary Infection Fifteen Years Preceding; Long Freedom from Symptoms; Entire Absence of Any Previous Treatment.

THE patient is a young colored man, aged 38 years. He gives the history of a primary sore about fifteen years ago. He was told at the time that it was syphilitic, but as it gave him no trouble, he paid no further attention to it. So far as he can tell us, he has had no evidence of any secondary skin lesions. The first sign of ill health was manifested about two and a half months ago, at which time he began with pains in the lumbo-sacral region. These grew progressively worse, and finally extended down into the thighs. Then there appeared a weakness of both lower extremities, and this progressed to almost complete helplessness. He could walk no longer, although there remained a certain amount of motion while in bed. There was pronounced atrophy of the muscles of both legs; all reflexes were abolished. As he lay in bed bilateral foot-drop was strongly in evidence. He did not have

sufficient command of his legs to walk even with assistance. Supported on both sides, he was able to go through the motions of walking, when again the foot-drop was the principal feature. His blood Wassermann was four plus.

The patient was brought before the class for the first time about three weeks ago. I then called attention to certain facts, or perhaps I had better call them opinions, concerning potassium iodide in the treatment of syphilis. The subsequent progress of the case has served to confirm me in my beliefs, and it is for this reason that the case was selected for study today.

For many years, I was a strong advocate of potassium iodide as the principal remedy for the visceral lesions of syphilis, and many were the remarkable if not dramatic results following its use. About ten years ago, the Wassermann reaction came into general clinical use, and shortly afterwards, the arseno-benzol preparations were administered by all syphilographers. It was then discovered that while these and mercury influenced the Wassermann reaction, potassium iodide was without avail in this respect. Hence the latter remedy gradually passed into the limbo of forgotten drugs, while arsenic and mercury held full sway. I must confess myself as having been one of those who had abandoned an old-tried remedy. While claiming remarkable results from the iodide treatment of syphilis, the final outcome was not ideal in that relapses were not uncommon and permanent cures but occasional. Nevertheless, it was the best plan at our disposal. If relapses did take place we had but to resume treatment, and if patients but observed care, a fair degree of health was maintained.

The arseno-benzol treatment, as you all know, promised much. At first it was claimed for it that radical cure followed upon a single administration. The error was soon discovered and intensive treatment with arseno-benzol and mercury became the order of the day. Both late and early stages of syphilis were thus treated. Mercury, which as recently as 1900 was pronounced by Sollman as useless in late syphilis, displaced potassium iodide.

Now had all of the above advances—for despite my criticism, I regard them as distinct advances—been considered in connection with past therapeutic experiences, the syphilitic would have been better off. Coincident with the introduction of the intensive treatment, there appeared in our midst a group

of cases of visceral and nervous syphilis, treatment of which by potassium iodide proved to be utterly useless. The dose or method of administration mattered not, the results were but a shadow of those obtainable in what appeared to be similar conditions as observed years ago. This situation created in my mind the opinion that the intensive treatment has either altered final pathological conditions or so fixed the spirochaete as to make it impregnable to therapeutic attack.

The patient now before you gave me an opportunity to test out my theory. As already stated he had had neither mercury nor arseno-benzol. So we started in with potassium iodide in rapidly ascending doses until at the end of a week he was taking one drachm of the crude drug three times daily. In the course of five or six days the pains ameliorated, and now have disappeared entirely. Motor function was slower in returning. Nevertheless there has been a satisfactory improvement. At the present time he is able to walk with some slight assistance. The foot drop is yet plainly in evidence. In other words potassium iodide proved itself as useful as of yore in a patient who has not been subjected to the intensive treatment now so much in vogue. In view of the pronounced muscular atrophy, and the probable permanent damage to at least part of the nerve structures, a complete functional recovery is not likely. I believe that we should continue the potassium iodide indefinitely as long as improvement is manifested. Then we should discontinue it absolutely, just as we did in former years. Now here is where I believe that the new lines in the treatment of syphilis should be utilized. The most enthusiastic advocate of potassium iodide in the old days recognized its limitation and longed for a supplementary treatment, which would bind the cure. This we have in part at least in the arseno-benzol, which should be administered according to clinical indications, and guided by the laboratory Wassermann. Mercury likewise should not be forgotten. We now recognize that in the past we were wrong in pronouncing that remedy useless in the late stages of syphilis. Under no circumstances do I wish to be misunderstood as minimizing the value of a good remedy. New remedies should supplement the old, and but seldom supplant them. I would tabulate the value of the anti-syphilitic medicines as follows: 1. For the primary stage, arseno-benzol followed by mercury; potassium iodide not at all. 2. For the secondaries, mercury and arseno-benzol, potassium iodide but

seldom if ever. 3. For visceral and nervous syphilis potassium iodide followed in the order by mercury and arseno-benzol. 4. A course of mercury for one month in each year for all syphilitics as advised by Jonathan Hutchinson many years ago.

Please do not misunderstand me as decrying the modern advances in the treatment of syphilis. Arseno-benzol and its congeners are unquestionably indispensable, but concerning all details we are as yet ignorant. The present difficulty arises from the fact that it has been regarded as "the" remedy for syphilis, instead of an invaluable agent in the treatment of that disease. To neglect the old in our enthusiasm for the new, is not good practice. At present our principal contributions to luetic therapy come from men who have been made well acquainted with the clinical history of syphilis as observed in its primary and secondary stages, and too many have obtained their training in military service only. These self-same authorities assert that by means of the energetic treatment they propose, visceral syphilis will be a thing of the past. Perhaps it will; and then again perhaps, and this I fear is the more likely, perhaps it will not. Already we are seeing cases of visceral complications which have apparently been treated energetically, and which unfortunately are decidedly resistant. What is more unfortunate, we are seeing cases of precocious visceral and nervous syphilis, which have been "well" treated. Some of the latter are difficult to differentiate from arsenical poisoning. Those that are distinctly syphilitic, are very resistant to mercury and potassium iodide. Indeed it would almost seem that the spirochaete had been made "fast" or "resistant" to further therapeutic measures.

Syphilis is a chronic infectious disease. As my colleague, Dr. Hunsicker truly says, its intensive treatment is irrational. We cannot tell of the outcome of present day methods until at least ten or a dozen years have elapsed. Perhaps it will require two or three decades to enable us to speak with authority. Syphilis is not to be treated intelligently in any event by those who, knowing the pathology of the disease only too well, are not conversant with its ravages in later years.

As time goes on, we are more and more impressed with the ability of the infection to attack the second and even the third generation. I am in full accord with the Connecticut physician who announces his belief that many of the undescribable and resistant illnesses of adolescence and early adult life are

the result of a tardy inherited outbreak. It is even possible that much of the general ill health passed by without definite diagnosis is due to syphilis in parents and grandparents, but as yet cannot be proven as such. In many of these the relation is proven by positive Wassermann reactions. My own personal experience leads me to believe that syphilis exerts its ill effects longer than hitherto supposed. Persons whom I know to have been infected have given birth to children who, according to general standards are without definite disease, but who present peculiarities, often passed over as endocrinic or neurotic, *which peculiarities they should not have in view of the excellent stock from which they come.* Let us keep an open mind on the subject.

ASTHMA.

Next I have to bring before you for discussion the records of three cases of asthma. They present the ordinary features of the disease. All three exhibit pronounced naso-pharyngeal difficulties, and have been admitted to the hospital for "sub-mucous resection." This operation has been performed by Dr. Fred W. Smith, and they will be discharged tomorrow. They afford me an opportunity for making some remarks concerning this most peculiar disease. No two cases appear to be alike. Clinical histories read almost like a romance. One patient is better at the seashore, another in the mountains; one thrives in California; another in Florida. One obtains relief in altitudes; another in lowlands. Some are aggravated by the presence of certain animals; others are not influenced. I have in mind a boy of 12 years who was the subject of most violent seizures. His tonsils and adenoids were removed for me by Dr. H. S. Weaver without any evident result. His father was an acknowledged syphilitic, and the winter following the operation, died with paresis. About the same time, his mother died suddenly of a pulmonary haemorrhage, although in excellent health apparently but an hour before. The boy became neglected. He had previously had extravagant care; I might almost call it hysterical care. Now he went out in all kinds of weather. He did about all the things to be expected of an American boy of 15 years; and presto, his asthma disappeared. As the cartoonist expresses it, "Can you beat it?"

Remedies proposed are about as varied in their results as

are the symptoms: Adrenalin, amyl nitrite, lobelia, nitre, stramonium, whisky, tobacco, are favorite palliatives, beneficial in some cases and gross failures in others.

Of late there has come into prominence a palliative which has given some beneficial results in this hospital, namely benzyl benzoate. It has been tried in all three of our cases, and has given satisfaction. There should be no hesitation in resorting to an efficient dosage, as the drug is non-poisonous. At least 30 minims of the official 20 per cent. solution should be administered. Larger doses may be tried should the smaller ones fail.

One feature of asthma that has always interested me is the presence of eosinophiles in the sputum, and sometimes in the blood. I have always felt that this phenomenon had an important bearing on its etiology, and possibly upon its treatment. The observations of Walker, of Boston, and his associates appear to have solved the problem, in that it now appears that one class of asthmatic cases, those of true bronchial asthma, are due to protein sensitization, the offending protein consisting of some animal or food substance or of a pollen. According to the theory they have propounded, it is essential to determine the offending protein. This is accomplished by means of the endermic tests. Small scarifications of the skin are made. On each of these is placed a small portion of each of the suspected proteins. These are topped with a drop of normal saline, and well rubbed into the skin. If the patient is sensitive to the proteins, a reaction appears within half an hour, and consists of a wheel or of an areola around the "vaccination." Of course a "control" vaccination without protein is also performed for comparison. We shall not make any investigation in this direction with any of our patients as they were admitted for surgical treatment only.

The "Walker treatment" appeals to me strongly as possessed of great promise. In those cases in which the offending protein is derived from food substances, good results are obtained by eliminating that particular substance from the patient's dietary. Protein derived from the hair of animals demands that the patient shall avoid close association with such animals or be treated by desensitization; and the same plan applies to the pollens. For those of you who are especially interested in the subject, the entire system of treatment is elaborated in the Oxford Loose Leaf Practice of Medicine, Volume II.

Of medicines that aid directly the asthmatic subject, I am fully impressed with the value of kali bichromicum 1x or 2x, potassium iodide in one to three grain doses, atropia in doses of 1/400 of a grain three times daily, and nux vomica.

Of vaccine treatment, I have but little to say. There is no reason why such should accomplish anything in true bronchial asthma. In asthmatic bronchitis, which is an entirely different proposition, we should be able to do something or even considerable by autogenous vaccines. (For additional remarks concerning asthma, see HAHNEMANNIAN MONTHLY, November, 1920.)

CLINIC OF OLIVER H. PAXSON, M.D.

CARCINOMA OF THE GALL-BLADDER.

THE patient is a married woman, 70 years old, and a housewife by occupation. Her chief complaint is pain in the abdomen and numbness in the left leg.

Was well until three years ago when she was treated for an attack of diarrhoea at another hospital, and discharged cured in three weeks. About September, 1919, she complained of dizziness which gradually grew worse; and pains through the abdomen which radiated down the legs, and up the back. Constipation was present, which was obstinate in character, requiring a laxative every other day. Eructations of gas with tasteless regurgitation was present, but no vomiting. The left leg has been numb for the last year but has not prevented her walking.

Three weeks ago the pain in the abdomen became more pronounced, and gradually increased, in spite of treatment. On September 28, 1920, jaundice was noticed, and has been constantly increasing.

She gives a past history of measles, erysipelas, jaundice twenty years ago, lasting three or four days; impacted fracture of the right hip nine years ago, and sciatic rheumatism six or eight years ago.

Examination shows a debilitated, old woman, cachectic, showing loss of weight—partly accounted for as being a poor eater—tongue coated brownish white. Food and drink tasteless, stools dark in color. Jaundice is present over the entire

body surface, including sclera, and is a light yellow in color. There is a slight prominence in the gall-bladder region, with generalized abdominal tenderness, greatest in the hepatic region. The liver border extends about one inch below the rib border, no nodules are palpable. Heart and lungs are negative.

Laboratory examination show the gastric contents to have a total acidity of 20 degrees, free hydrochloric acid absent, lactic acid absent, occult blood absent, and mucous about 60 per cent. Feces showed fat present. The Wolff-Junghans reaction was negative. Repeated urine examinations were negative, except for the presence of bile. Blood count shows erythrocytes to be 4,980,000, hemoglobin 77 per cent., and leukocytes to be 6,600, 20,000, and 12,500 in three counts taken ten days apart.

Roentgenographic findings fail to show evidence of biliary calculi. The temperature was usually subnormal, pulse varying from 90-100, and respirations from 24 to 30.

Discussion.—Cachexia, poor nutrition, jaundice, and the above gastric findings leads to a discussion of malignant disease of the abdominal viscera, *i. e.*, the stomach, gall-bladder, liver, pancreas. The next point is to what extent can we depend upon the physical and laboratory findings to determine the particular organ affected? Cabot gives the following table for the causes of jaundice:

Icterus Neonatorum	Too numerous and vague
Sepsis	Too numerous and vague
Gall-Stones	56 %
"Catarrhal Jaundice"	20 %
Cancer of Liver	8.5%
Cirrhosis	6 %
Cancer of Bile Ducts and Gall-Bladder.....	4 %
Cancer of Pancreas	3. %
Gastric Carcinoma	2 %
Cancer of Duodenum	0.5%

A persistent jaundice usually presents to us the problem of deciding between three causes: 1. Gall stones and their effects. 2. Cancer of either the pancreas or bile ducts, occasionally of the liver itself. 3. Cirrhosis.

Against gall-stones in the present case is the continuance of jaundice without variation over a period of 40 days; the

absence of colic, and the presence of some enlargement in the region of the gall-bladder. Long standing jaundice due to gall stones is usually associated with a normal sized or contracted gall-bladder (Courvoiser's law). The roentgenographic findings also negated gall stones.

Pancreatic Carcinoma.—Emaciation is prominent; jaundice due to obstruction of the common duct is not uncommon. Palpation of a mass in the epigastrium is at times possible, the blood presents the changes of secondary anemia, leukocytosis is often present. Constipation is the rule, and the presence of fat and muscle fibers in the feces is evidence of the interference with the pancreatic function, due to the disease under consideration.

Malignant growths of the liver may be either primary or secondary, the latter being more common (25.1). Such metastatic growths are commonly secondary to carcinoma of the stomach, breast, pancreas, or lower intestinal tract.

Primary carcinoma of the liver parenchyma is rare, but primary carcinoma of the gall-bladder or bile ducts is a more frequent occurrence. It affects the gall-bladder usually, the common duct less commonly, and the smaller ducts within the substance of the liver still less frequently. In this instance the diagnosis of malignant disease is comparatively simple, but as to its exact location, the problem is more difficult.

Symptoms of Pancreatic Disease.—As to the stools, depends upon the interference with both the internal and external secretion. If the external secretion alone be involved, the assimilation of proteins and fats is interfered with and muscle fibers and free fat appear in the stools.

Pancreatic Pain.—Is in the epigastrium, and may radiate to the back and shoulders, or sternum; occasionally if the head of the pancreas be involved it may radiate to the right hypochondrium. Tumefaction of a mass is only palpable in about 25 per cent. of the cases, and about an equal valuation may be derived from such a mass found in the region of the pancreas.

Pressure Symptoms.—1. Upon the bile ducts may cause jaundice and distention of the gall-bladder. 2. Upon the portal vein causes ascites and hemorrhoids. 3. Upon the inferior vena cava causes edema of the lower extremities. 4. Upon the left ureter causes hydronephrosis.

With the history of the case and the known symptoms of these two diseases before you the determination of the diagnosis is one practically to be decided by an autopsy, although

my inclination is to choose pancreatic disease; the final determining factors being: First, because of the fat in the stools; and, secondly, because it seems to be a primary disease.

Prognosis.—The patient may show some improvement, but there is no chance for recovery.

Treatment.—Surgical treatment *at this date* is contra-indicated by cachexia, emaciation, jaundice, the age of the patient; as well as the possibility of the extent of involvement in the organs diseased, whether pancreas, or gall-bladder, and metastases. At what time in the past would such a case be a favorable one for surgical treatment? According to her history and our belief as to the duration of such a malignant disease, the time was in 1917—three years ago, when she was ill, as has been recorded.

Internal treatment can be but palliative. Phosphorus is the indicated remedy, because of its symptoms, and because of the pathological changes believed to be present. It cannot be said of phosphorus that it has cured malignant disease, but we do know that it is, as Allen says, "a tissue of first rank, as well as a most virulent poison. It inflames and causes degeneration of the mucous membrane of the entire alimentary canal, causing gastritis, entero-colitis, and dysentery, all characterized by destructive processes and hemorrhage. It causes acute yellow atrophy of the liver as well as a subacute hepatitis. It disorganizes the blood and produces hematogenous jaundice."

It does not detract from our belief in phosphorus as a curative agent that in this instance, at this date, we are on a par with the surgeons; in fact, we can claim we are in good company, and I hope they will be willing to reciprocate this opinion. Why may we not say that in 1917 if phosphorus had been prescribed she would not have been the subject of such a clinic as this today?

Hydrochloric acid dilute has been used as a palliative adjuvant on the basis of absence of free hydrochloric acid, and a low total acidity.

The progress of the case and the response to treatment does not justify a better prognosis than was given before the treatment mentioned.

Outcome.—The patient became weaker, the jaundice continued and she died November 11, 1920. The autopsy report showed primary carcinoma of the gall-bladder, with metastases in the liver, retroperitoneal glands, and the duodenum, by extension. Single gall stone 1x2 cm. in the gall-bladder.

CLINIC OF F. W. SMITH, M.D., AND H. M. EBERHARD, M.D.,

**TONSIL INFECTIONS AND THEIR RELATIONSHIP
TO DISEASES OF THE DIGESTIVE SYSTEM.**

Foci of infection with resultant focal infections are responsible for many lesions of the gastro-intestinal tract and its appendages.

Since the importance of foci of infection has been recognized, the various methods of treatment for gastric and duodenal ulcer, gall bladder infections and infections of the biliary ducts have given more permanent results.

I well remember the numerous recurrences of gall bladder infections before emphasis was placed upon foci of infection in the head, etc. Again, before the importance of these foci was recognized, many acute gastric and duodenal ulcers, which should have been helped or completely corrected by medicinal or dietetic therapy, recurred.

It is only by recognizing the various foci of infection, be they primary or secondary, that we hope to permanently correct lesions of the gastro-intestinal canal. This, of course, depends upon whether areas of infection are really the cause, of the gastro-enteric disturbances.

Of one thing I am sure, however, since such great importance has been placed upon recognizing the various areas of infection, particularly in the head, my percentage of cures in the treatment of gastro-enteric disturbance has manifestly increased.

I recall especially a case of duodenal ulcer that was operated and a gastro-enterostomy performed which, even after rest in bed, and an ulcer cure given, had a return of the old symptoms. In searching for a focus of infection I was surprised to find a little pus oozing from the right tonsil. A culture from this pus soon convinced me that the infection was a very virulent one, and that the tonsils should come out. After the removal, in a very short time, the patient went on to complete recovery and had no further trouble from the ulcer.

Our first case today is a very interesting one, and the findings should be brought to your attention:

Mr. L. is 45 years of age, whose family and personal his-

tory is unimportant. He first experienced epigastric distress about four years ago when he was attacked suddenly, early in the morning, with violent pain in the epigastrium. This soon localized under the right costal border, and after a hypodermic injection of morphine, he felt better for a week. During the interval, or until the next attack, he belched much gas, had severe acid risings and was always conscious of discomfort in the epigastrium.

He often had slight pain in the epigastrium which had no relation whatever to the taking of food, vomiting or alkali.

Occasionally, after one of his severe paroxysms, which came frequently, he would have chills, fever and sweat, followed by a slight injection of his conjunctivae. Always following this condition the feces were white and contained much neutral fat.

When examined I found, among other objective findings, tenderness over the area which corresponds to the head of the pancreas; also tenderness, on deep pressure, over the gall bladder.

A gastric analysis showed very marked hyperacidity and poor digestion of starches, and no occult blood.

Feeling that his trouble was below the pylorus, I passed into the fasting stomach a sterile duodenal tube and permitted this to flow through the pylorus into the duodenum. At the end of one-half hour, I was not able to secure any bile, but extracted the characteristic mucus which is found in the duodenum.

I next injected 100 mils of a 25 per cent. solution of magnesium sulphate and waited ten minutes. By syphonage I secured about thirty mils of a ropy, thick, cloudy mucus which, upon culture, showed many unidentified organisms, with a streptococcus viridans. About forty leucocytes were found in the field of the microscope from the gross specimen, with much mucus and debris.

I continued the syphonage for five minutes and collected another sample which showed a similar condition, with fewer leucocytes, however. After five minutes more the bile began to run more freely and was decidedly clear. Culture from this was negative and only a few scattered leucocytes were found.

Upon examining this man for a focus of infection causing his gall bladder pathology, I found that his tonsils were large as you now see. By slight pressure a yellowish sub-

stance could be excreted from the crypts. A culture made of this substance showed streptococcus viridans.

Before applying any special treatment to this man, I have advised him to have his tonsils removed and then, by the procedure just outlined, namely, emptying the gall bladder and biliary system, two or three times weekly with the duodenal tube and magnesium sulphate, we ought to eventually secure a sterile gall bladder, unless the structures are too deeply invaded. In that event it would suggest cholecystectomy rather than surgical drainage.

This is the type of case wherein a recurrence of the digestive disturbance is common, unless the focus of infection is removed.

The findings in this case of infected tonsils showing streptococcus viridans and the delivery from the gall bladder and biliary system of the same organism, is a very strong link as to etiology, prognosis and treatment.

Dr. Smith will now remove these tonsils.

If you are interested, I shall be glad to let you know the progress of this case in a few months.

CASE II.—Mrs. W., a young woman of 23, a widow, has been having pain one hour regularly after each meal, relieved by a food alkali and vomiting.

A gastric analysis shows free H.Cl. in excess, the total acidity markedly increased; occult blood has been present in the gastric filtrate and feces.

The case is one wherein subjective and objective symptoms point toward acute gastric ulceration. Upon careful examination of the nose and accessory sinuses, Dr. Smith has found a decided infection of both tonsils. A culture made gave streptococcus hemolyticus.

As you know, it is very difficult to recover these organisms from the surface of an ulcer, but upon excision of the ulcer, the organism is frequently found imbedded in the ulcer structure.

This young woman has been under my observance for some time, receiving dietetic and medicinal treatment. She no longer complains of her former pain and discomfort and really feels that she is almost well. Finding, however, the tonsils infected, and knowing that without their removal, there would be great danger of a recurrence or an interruption in

the healing process, I have asked Dr. Smith to remove these tonsils.

You now notice after removal of the tonsils that they are large and the crypts and follicles full of a cheesy substance which has a very bad odor. This substance undoubtedly contains the organism which we were able to extract by pressure from the tonsils, and from which the organism mentioned was recovered.

In conclusion, I should like to emphasize one point regarding *foci* of infection and *focal* infection. The terms are often used incorrectly.

A focal infection may be defined as a systemic or local disease, due to infective micro-organisms, carried into the blood or lymph stream from a *focus* of infection.

A focus of infection is a localized or circumscribed area of tissue invaded by pathogenic micro-organisms. It may be either primary or secondary (Billings).

As my experience with diseases of the digestive tract increases, I am convinced that to correct successfully these diseases, the throat, nose and accessory sinuses must always be examined. Failure to find an existent focus of infection, may defeat the expected medical or surgical result.

DR. SMITH: I might add that the remarks just made regarding the importance of foci of infection in the head, etc., are of great importance.

Many times in the treatment of some disease, even outside of gastro-intestinal canal, these foci are of prime etiologic importance.

You will notice that I have removed these tonsils without pain, nor much distress to the patient. In doing so, I have used a 1 per cent. solution of Novacaine, by the method known as infiltration anaesthesia.

CLINIC OF D. BUSHROD JAMES, M.D.

PROLAPSUS UTERI.

PROCIDENTIA.—There is, perhaps, no subject in gynecology that is more instructive than that of prolapsus uteri, or its extreme stage of procidentia; for it offers so many points for consideration, before decision as to the best therapy. We must study the etiology, the pathology, the social state, and the age of the patient, before deciding the type of operation best offered. Each case is law of its own, and needs individual study.

The study of the etiological factors needs first consideration. Is it the result of traumatism incident to labor, resulting in marked laceration of the cervix, with an associated hypertrophy, and lacerations of the vaginal canal, with separation of the muscular fibres and general loss of tone and support of the vagina, that tends to draw the body downward? Is it the result of inter-abdominal pressure, or growth, in or upon the uterus, that pushes the body downward? Is it the result of over-stretching of the supporting ligaments, or is it the associated condition of senility, and loss of adipose tissue, incident to age or disease?

The most frequent cause is the result of labor, plus the senile changes, with general loss of muscular tone.

The pathology not only affects the uterus, but all the surrounding structures. There is generally an increase in size and weight of the organ, the result of hypertrophy or oedema, due to circulatory disturbances, from the altered position of the uterus. The cervix is usually lacerated and ectropic, and it may be hypertrophied or oedematous, even to the size of the body. The endometrium is hypertrophied, even in the senile cases, and productive of the leucorrhoea, often associated with these cases. The vagina is not only lacerated, but there is a general relaxation, and loss of muscular tone, with cystocele and rectocele; frequently it becomes thickened or leather-like, from exposure to the air, loss of normal secretions and traumatism. At times there may occur eroded areas, at different sites of the vagina, principally around the cervix. The round and broad ligaments, due to over-stretching, no longer act as tether ropes, to hold the uterus in its normal

variations of movements, but allow of too free motion, so the condition is usually progressive. From the disturbance of circulation, there may be varicosities in the broad ligaments, or cystic changes in the ovaries.

The age and social state of the patient, may decide the type of operation, for operations indicated in those past the menopause, natural or artificial, may and are likely to be, contraindicated in one still within the period of possible pregnancy. Again it may be that the patient is not a good surgical risk, and time may be a factor in the operation.

The patient of this morning is one who has the pathology for years, and has been the result of lacerations and lack of support of the ligaments, following repeated and rapid labors. She is post-menopause by five years, thin, and not in general good physical condition; so we have decided upon an operation, that consumes little time, and generally satisfactory, *i. e.*, the transposition operation, or sometimes called the Watkins operation.

While this is the main operation, we will have to consider the condition of the cervix and vagina. On account of the hypertrophy and laceration of the cervix it will require amputation. The cystocele will be taken care of by the Watkins operation, but the rectocele will need a perineorrhaphy.

The cervix is grasped by the Vulsellum forceps, and traction made to deliver the pelvic contents through the vulva. A sound introduced shows the cervix and body elongated, but chiefly the former, and as the os is patulous, there is no necessity of dilatation, for the curette can be introduced with ease, and the hypertrophied endometrium removed, following by irrigation, to remove any loosened shreds. A tenaculum now grasps the cervix, and a circular incision is made through the vaginal mucous membrane, the muscular structure and the endometrium. The circular incision is preferable to the conical incision of Schröder, for it removes the point of the wedge, and leaves a broader surface. This incision is made sufficiently high up to remove the greater part of the cervix.

Interrupted cat-gut sutures unite the mucous membrane of the canal to the mucous membrane of the vagina, and include the muscular tissue of the cervix, on the posterior lip, and one suture on either lateral sides, narrows the amputated cervix and lessens the bleeding, anteriorly the sutures are not introduced until later. A longitudinal incision is made from

below the meatus, to the circular incision of the cervix, and the bladder released from its lateral attachments by careful blunt dissection, after the firm median attachments are dissected by cutting. A piece of gauze wrapped on the finger is the easiest and safest method.

This dissection is continued wide, to make sure of the easy displacement of the bladder, and not to allow pockets to remain in the base of the bladder. There then remains the vesico-uterine attachments, that require separation by the scissors, at their cervical union, and then when released, blunt dissection by the gauze-covered finger pushes upward the connective tissue until we come to the peritoneal reflection over the uterus. When this point is reached, the tissue is put on a stretch and an opening made into the peritoneal cavity by the scissors, and enlarged laterally, encircling the cervix. The fundus is delivered through the incision, and the lateral regions palpated, and in this case, found atrophic, and need no consideration. The bladder has now been displaced above the symphysis pubis, and the uterus is in front.

While the uterus is held in position, the excessive or redundant vaginal mucous membrane on either side of the longitudinal incision is removed. Sutures are now introduced high up toward the top of the incision, close to the urethra, and begin on one side of the vagina, then pass through the uterus, near the fundus, and then emerges on the opposite side of the vagina, so that when brought taut, the fundus is wedged firmly between the vaginal walls.

Three sutures are usually sufficient to fix the body from fundus to cervix. A running suture beginning at the top of the incision unites the raw edges. Returning to the cervix the mucous membrane of the canal is now united to the vaginal mucous membrane, and so introduced as to evert the canal and preserve its integrity. Lateral sutures now introduced on either side of the amputated cervix, bring its mucous membrane anterior to the reflected mucous membrane posterior, and includes the muscular tissue, according to the usually accepted method of trachelorrhaphy. The gauze pack is now introduced against the cervix, to control the bleeding while the perineorrhaphy is done.

A clip is placed on either side of the vulva, above the gland of Bartholini, and separated, so as to place the base of the triangle of dissection on a tension. The point of relaxation, at

the upper part of the vagina, is now located, and held with Vulsellum forceps. There is no necessity of outlining the area to be denuded, for each case must be decided upon as the operation proceeds.

Incision with the scissors forms the base of the triangle, including the tissue between the two clips. Another strip about an eighth of an inch in width, removes more of the vaginal tissue higher up. At this point a clip is placed in the mucous membrane of the vagina, so as to form an apex at the triangle. By a gauze-covered finger, the connective tissue between the vagina and rectum is now pushed aside, this continued as high up as the point of relaxation, usually at the recto-vaginal reflection, and pushed sidewise sufficiently to undermine all the excessive vaginal mucous membrane. On either side where the clips have been placed the levator muscle is so firmly attached that it cannot be released by blunt dissection, but a few snips of the scissors usually releases. This should expose, on either side, the retracted levator muscle.

A figure of eight cat-gut suture is now introduced in such a manner as to encircle all bleeding points higher up, and when tightened will approximate the bellies of the muscles, in the median line. Two other sutures will be sufficient in this case, to approximate the muscles, as far as the base of the triangle.

The redundant mucous membrane is now dissected away, and in this case instead of going to the apex of the triangle will be made more elliptical. A running suture of extra hard cat-gut is now introduced, beginning at the base of the ellipse, and continued down to the vaginal opening. This suture will include the mucous membrane of the vagina on one side, strands of the levator muscle and the connective tissue, and emerges from the opposite side of the vagina. By this method the buried sutures are fairly well protected, and the tissues are brought in such contact that there is little possibility of blood accumulating underneath the outer row of stitches.

Individual cat-gut sutures now unite the raw surfaces over the perineum, and include the skin edges, the connective tissue, and the muscle. The sphincter ani is now dilated, preferably by the use of the fingers, so as to gauge the amount of pressure being made. The gloves are now removed and the temporary vaginal pack extracted, the vagina painted with

iodine and iodoform gauze pack introduced, to remain for 24 hours; following its removal the patient will be given a lysol douche. These douches will not be repeated if the vagina remains dry and has no leucorrhoea; but upon the development of any discharges they will be repeated as frequently as necessary to control the leucorrhoea. The patient will not be allowed to over-distend the bladder, and will be urged to urinate naturally within six hours, and if unsuccessful, will be catheterized. Following this operation and lasting sometimes for several weeks, the patient will not be able to retain the usual amount of urine; but this will gradually right itself, and eventually they will be able to hold about the usual amount.

UTERINE FIBRO-MYOMA.

CASE II.—SUPRA-VAGINAL AMPUTATION OF UTERUS FOR FIBRO-MYOMA.—The second case, I am advised by the anaesthetist, will require rather rapid operating for there has already been noted a drop in the blood pressure. The pathology diagnosed is one of fibro-myoma of the uterus. The median incision is made sufficiently long to allow of easy manipulation; not too long so as to require too much time to be sewed up. The fundus of the uterus is grasped by the hand, and as there are no adhesions, is delivered through the abdominal incision. As there are no pathological changes in the ovaries or tubes, the ovaries will be retained, so as not to deprive the patient of the normal ovarian secretions. A ligature is placed in the infundibulo-pelvic ligament, so as to control the greater part of the bleeding from the ovarian artery. A ligature is now placed around the round ligament, close to its uterine attachment. This procedure is repeated on the opposite side. The tube is now removed by cutting across the top of the broad ligament above the ovary, and continued downward to inside the ligature around the round ligament. This releases and allows the uterus and tumor to be drawn higher up into the field of operation. The broad ligament is now cut close to the uterine reflection, and as low down as the cervix. The uterine arteries are now located by their pulsation, and a ligature passed around them.

The uterus and tubes are now pulled upward and the reflection of the bladder located. An incision is then made across the uterus above the reflection of the bladder, through

the peritoneum over the uterus and the bladder is then pushed downward, under the symphysis, out of the field of operation. A wedge-shape incision is now made across the cervix, and the tumor and the body of the uterus removed. The cervical canal is now cauterized with iodine. A running suture will approximate the muscular structure at the angle of the wedge, and is so placed as to include the canal.

Oozing from any large vessel is now controlled by individual ligation. The round ligament is now brought into the cut surface of the cervix, with sufficient tension to hold the stump anterior and held in position by two sutures on either side. Running sutures, beginning at the original ligation of the broad ligament that controlled the ovarian supply, unites the two layers with the broad ligament.

As we approach the stump the round ligament will, be incorporated in the suture, uniting them to the broad ligament. The suture is then continued over the stump of the cervix and includes the anterior and posterior peritoneal reflections, and the muscular structure; it is then continued out on the other side so that when the operation is completed, the cervix will be extra-peritoneal.

The toilet of the peritoneum is then completed by the removal of any blood that may have accumulated in the cul de sac and the abdomen closed in three layers.

CLINIC OF L. T. ASHCRAFT, M.D.

TUMORS OF THE URINARY BLADDER.

TODAY I shall present for your consideration the subject of treatment of tumors of the urinary bladder; and at the conclusion of my remarks, I will show you some patients, so as to demonstrate the treatment of these tumors by means of radium and electro-thermic coagulation, also exhibiting some cases on which I have operated surgically.

My studies in cystoscopy have revealed to me quite a number of cases of tumor of the urinary bladder; and three distinct types of growths have been noted in this region: (1) Benign tumors, which are covered with villi, and usually pedunculated (papillomas); (2) malignant villous growths,

which are commonly sessile (carcinomas); and (3) bald malignant growths (epitheliomas). In addition to the types already enumerated, there may occur, in rare instances, myxomas and myomas.

The neighborhood of the ureteral orifices and the trigone is the most common site of vesical tumors; but occasionally one meets a tumor situated elsewhere, especially at the vertex.

The cause of tumor formation is unknown. The hypothesis that new growths are due to irritation has been advanced. They are quite frequent among those who work with aniline dyes, and are three times as common in men as in women. They are most liable to occur between the ages of twenty-five and sixty years.

The earliest symptom is a painless hematuria, the bleeding increasing as the disease progresses. Later, there appear pain and dysuria from clots, increasing frequency of micturition, cystitis, obstruction to the urinary flow, and retention of urine.

The average duration of life in these cases is from three to five years. When the tumor is a papilloma, the course may be a little longer. Death occurs from sepsis, exhaustion and uremia.

The diagnosis can properly be made only by means of the cystoscope. It is often possible to determine by the use of this instrument whether the tumor, if one be seen, is benign or malignant. Cystoscopic judgment is an important asset in attempting to arrive at the correct diagnosis. Single villous tumors with long pedicles are usually benign; while sessile, multiple or bald tumors are commonly malignant.

The best treatment of tumors of the urinary bladder is a matter that has not yet been satisfactorily decided. Each case is a law unto itself, its treatment depending upon its type, its clinical symptoms and the location of the growth.

Assuming that we have a vesical tumor to deal with, the question at once arises: Shall we operate, fulgurate, irradiate or palliate? Until about two years ago, I used the d'Arsonval current when practicable, operated primarily but rarely, and palliated when these other procedures were not indicated.

F. S. Watson says that the treatment of tumors of the bladder is one of the most discouraging problems in surgery. Because of recurrence in benign tumors and great operative mortality, and especially in these cases in which partial re-

section and total extirpation of the bladder are done, the explanation of the facts stated with regard to benign tumors is, he says, to be found chiefly in the following:

1. The probability that a good many neoplasms believed to be benign were, in fact, malignant.
2. The large number of recurrences in malignant form following the removal of tumors said to have been benign.
3. The marked tendency of papillomata to recur in parts of the bladder other than the site of the original tumor.
4. The failure to remove the base of the tumors thoroughly enough.
5. The overlooking of beginning papillomata in removing a more developed growth.

The explanation of the large number of deaths from shock and from renal infection in the operations of partial resection and total extirpation of the bladder is to be found in the study of the causes of death. This study shows that there are just three fatal factors of importance connected with the performance of these operations. They are (1) The lowered power of resistance of the patients, which is so frequently a feature of cancer when it has advanced beyond its early stages of development; (2) shock; (3) renal infection.

Tumors situated high up at the summit of the bladder may be removed by partially resecting the bladder. The cystectomy may be quite radical, since the bladder readily accommodates itself to a capacity of four or five ounces, even after large portions of its walls have been cut away.

Some cases of bladder tumor are so extensive and so frankly malignant as to preclude the possibility of attempting any surgical removal. In these circumstances, radium may be employed as a means of palliation, either cystoscopically or by the use of an applicator alone; or, should the surgeon decide that an open operation is necessary, the technique to be followed should consist first in a free exposure of the tumor, and then in cauterization of its base with the galvano-cautery or the use of electro-thermo-coagulation. Electro-thermo-coagulation, or surgical diathermy, is a method of coagulating neoplasms by means of the heat generated by the resistance of the tissues to high frequency currents. It offers a number of advantages, among which are that the limitation of the power field is within the control of the surgeon, and also the amount of the dose. Moreover, as all lymph channels and lymph

spaces around the tumor are immediately sealed, inoculation metastases are prevented. Hemorrhage is immediately checked, and the tumor becomes a crust.

Following this procedure, alcohol is thoroughly applied to the walls of the bladder, in order to remove, if possible, any cancer cells that may be implanted there. A drainage tube is then introduced. After the shock of the operation has subsided and it seems as if the patient could stand a massive dose of radium, this is applied through the open wound, giving from 800 to 900 milligram hours of irradiation. The same treatment may be repeated once or twice at weekly intervals during the period of convalescence, until about 3,500 milligram hours have been used.

The unfavorable results of surgical measures led Beer to attempt fulguration by means of the current Oudin. This has become very popular, and most urologists believe that the majority of tumors, both benign and border-line, and even the smaller malignant ones, may be successfully treated by this method. In November, 1911, I employed the Oudin current on several cases at the meeting of the Clinical Congress of Surgeons of North America, held in Philadelphia, subsequently publishing my results. Shortly afterwards, however, a tumor, suspiciously malignant, not only failed to respond to this current, but grew with alarming rapidity in the interval between treatments. This led me to employ the d'Arsonval current in that case. With it, the growth was temporarily controlled, the hematuria and cystitis decreasing.

Previous to employing it on this patient, I had conducted a series of experiments with both the Oudin and the d'Arsonval current on raw beefsteak and liver. The results of these experiments and the success obtained in this case led me to employ this method of treatment in a series of subsequent cases, the histories of which I published. It may be stated, however, that my general conclusions were that the d'Arsonval current was superior to the Oudin in treating benign tumors; because, with the latter, there was a possibility of feeding the growth; but that in malignant cases, the value of this method of treatment still remains to be proved.

Later, I became interested in determining whether the therapeutic use of radium in such cases might not give still better results than either surgery or fulguration; or, at least, might not be used with advantage in combination with one or

both of these. Within the last two years, medical literature has contained a number of communications regarding the treatment of tumors of the urinary bladder by means of radium and radium emanations. The reports given were so encouraging that I decided to investigate for myself the value of radium therapy in such cases.

Through the courtesy of my colleague, Dr. Benson, I was instructed in the technique of radium application; and, realizing the importance of operating under direct vision, I devised a "radium cystoscope." Its advantages are that by its use one may sight the tumor and apply the radium to whatever portion of the growth one desires to irradiate. It is not necessary, unless the bladder is very irritable, to give a local or a general anesthetic. I have, however, in the cases of some quite elderly persons with a very irritable bladder, used nitrous oxide gas.

In treating hemorrhagic papilloma the container, holding 60 milligrams of radium salt, is directed toward the afferent vessels or the base of the tumor, or to whatever part is to be irradiated. Usually it is not advisable to give an exposure of more than fifteen minutes, on account of the intensity of the lightly screened rays that are focused directly on this point. Radium, here, acts by attacking the afferent vessels of the tumor, causing a sclerosis of the blood-vessels, to be followed later by an ischemia, thus causing a cessation of the hemorrhages associated with tumor growths in this region. Should, however, a collateral circulation be established as the result of an insufficient amount of irradiation, the resulting hyperemia will retard the curative effect of the treatment, which is ordinarily shown by the candle-drip appearance of the parts through the cystoscope. These parts die and drop off into the bladder, being then voided with the urine.

The irradiation in any one situation in these conditions should not exceed fifteen milligram hours during one treatment, but provided that the intervals between the applications are of sufficient length, two hundred milligram hours may be given in the course of one month.

The question might arise, Why, in the treatment of hemorrhagic papilloma of the urinary bladder by radium, are the exposures so short? (15 milligram hours at each treatment.) This condition being presumably benign, there is no reason for wishing to obtain any direct alterative cell change in the growth itself. We wish to bring about an alterative con-

dition in the afferent vessels of the growth, going on to total obliteration, and bring about an ischemia of the lesion, which will eventually cause total disintegration. To obtain this effect upon the vessel wall, it is necessary to use a relatively large amount of the element (60 mgm.) with a minimum screenage (one mm. of silver), and to direct the rays not so much upon the growth as upon the base containing the afferent vessels. This amount of screenage allows for a mild secondary reaction, which is best calculated to bring about the desired change in the vessel wall. If, however, this amount of element (with only this minimum screenage), were left in place for the same length of time as in the case of fully screened radium when used in the treatment of malignant lesions, then we should probably have, as the result, a violent reaction, which might threaten the integrity of the bladder wall. With the screenage here employed, some of the beta rays are allowed to escape, as well as the secondary (or sagnac) rays; and while this is quite necessary to bring about the desired reaction in these short exposures, their prolonged presence would undoubtedly cause marked tissue necrosis.

In cancer work, the ordinary screenage is silver or platinum, .05 mm.; brass, mm. j.; and rubber, mm. ij.; this screenage allowing only the gamma (deeper) rays to escape. In ordinary milligramage, these rays cause no secondary reaction, but cause the marked changes in atypical cell structure. Radium so screened may be used for a milligramage totalling up to 3,000 hours without any severe local reaction; but certain individuals and certain locations (notably the uterus) will show a systemic reaction—when a dosage of 500 to 1,000 mgm. hours has been reached, even though so screened.

I am not in a position to speak authoritatively concerning the value of radium in the treatment of these cases, inasmuch as my experience has been comparatively limited. In this respect, however, I am in just the same situation as the majority of urologists, as cases of bladder tumor are quite rare, and as radium has only been in use for the treatment of this condition for a few years. Nevertheless, from the experience that I have had, I believe that this method of treatment has great possibilities of future usefulness.

In conclusion, I would say that benign cases should always be treated through the cystoscope, using radium or the d'Arsonval current, or perhaps a combination of both. On the

whole, electro-thermic-coagulation was to me a very satisfactory method of treatment until some cases failed to respond to it. In benign tumors, surgery should never be tried first, because of the tendency of benign papillomata to produce malignant growths after a cutting operation, or other mechanical irritation.

In frankly malignant cases, it is unwise to temporize with radium cystoscopically, for the reasons previously stated. Here it is best to open the bladder, cauterize the base of the tumor and after a few days to apply massive doses of radium.

Radio-therapy may be tried after the wound has closed.

Palliation is reserved for those cases which are hopelessly inoperable.

CASE I—*Papilloma-Electro-Thermic Coagulation*. Mrs. H., married, age forty-two, a patient in the surgical wards of the Hahnemann Hospital, gave the following history:

For the past year she had been troubled with frequency of urination, being compelled to void almost hourly by both day and night. During July she first noticed blood in the urine. Urinary analysis showed a specific gravity of 1024, an alkaline reaction, albumin, pus and blood. The red cell count was 3,400,000. The Wassermann reaction was negative. Cystoscopy revealed a tumor with a short, thick pedicle, the size of a twenty-five cent piece, situated above the left ureteral orifice; also numerous hemorrhagic areas around it. There was no involvement of the inguinal glands.

A tentative diagnosis of papilloma was made. Because of the character of the case, it was thought best at this time to use radium. Accordingly, sixty milligrams of radium was applied directly to the afferent vessels of the mass, using my cystoscopic radium applicator, and held there for fifteen minutes. Following this treatment, there was a slight amelioration in the symptoms. Therefore, the patient was subjected to a similar treatment at weekly intervals until two hundred and forty milligram hours had been given in all. After the fourth application, although the symptoms were improved, there was not noted the same extent of amelioration in the condition as had been experienced as the result of irradiation in previous cases. The calls to urination were still too frequent, the bleeding persisted, and the tumor was not showing the characteristic changes that should result from the application of radium.

For this reason, I decided to employ the d'Arsonval current, in the hope that I might more quickly bring the case to a successful termination. I will now demonstrate to you the technique of fulguration; or, perhaps more properly speaking, electro-thermic coagulation.

The patient's urethra is locally anesthetized with a 2 per cent. solution of cocain. The bladder is irrigated with boracic acid solution until the return flow is moderately clear. Care must be taken, in irrigating a bladder that is the seat of a tumor, to inject only three or four ounces of fluid; because, by over-distending the bladder, one will stretch its walls, thus producing an increase in the hemorrhage and interfering very seriously with cystoscopy.

I now introduce the cystoscope and localize the tumor. The wire that you see connected with the high frequency apparatus is inserted for a distance of three millimeters into the substance of the growth. I now signal the operator who controls the machine to turn on the current. The first application will last about fifteen seconds, the current being one of about three hundred milliamperes. After this I give the patient a rest of about thirty seconds, and then give the operator another signal. This time we employ five hundred milliamperes.

During the process of coagulation, one is able to note constantly the action of the current upon the tumor. You will observe that the patient complains of very little distress; but in some cases, I have been compelled to give nitrous oxide gas while doing this work. This, however, is the exception, rather than the rule.

Having applied the current at one point, I now withdraw the wire and insert it to the same depth in another part of the growth. This time, I shall use one thousand milliamperes for fifteen seconds. Formerly, in doing this work, it was my custom to employ a small amperage. Recently, however, I have been giving as much as I think the patient can stand.

It is not wise to make more than two or three applications of the current at any one sitting, when operating through the cystoscope. Consequently, I shall now stop the treatment. After several days have elapsed, I shall decide whether it is better to fulgurate again or to use radium. I feel pretty sure that by a combination of these methods I shall be able to remove this growth safely.

CASE II.—*Multiple Papillomata. Radium Application*

Through the Cystoscope. Mr. H., aged sixty-four, was referred to Dr. Leedom, for hematuria. He gave a history of having passed blood in the urine for a period of two months, the bleeding being accompanied with frequency of urination, and some distress. He has lost twenty-five pounds in weight during the last four months, and complains of pain along the course of the sciatica and obturator nerves. He is anemic and nervous. The red cell count is 4,500,000. Urinary analysis shows an alkaline reaction, albumin, pus and blood. The Wassermann is negative. There is no inguinal adenopathy and no enlargement of the prostate.

Through the cystoscope there can be seen a flat tumor just beyond the internal sphincter. This tumor is about the size of a dime. There is a similar and smaller one near the right ureteral orifice. While I thought these lesions were suspicious of malignancy, I decided to try the effect of the application of radium through the cystoscope upon them before resorting to any more radical method of treatment. The larger growth is, unfortunately, very badly situated for surgical interference; and I believe the patient to be a poor surgical risk. Moreover, it is perfectly within the domain of good treatment, even though surgery may have to be done later, to apply radium in advance of any operative procedure. Therefore, I shall do so at this time.

About a week ago I attempted to apply radium through the cystoscope; but the patient suffered so much that I asked Dr. Tyler today to give him nitrous oxide gas. Accordingly, he is presented before you anesthetized sufficiently for me to apply the radium without producing discomfort.

Our technique is to apply, through the cystoscope for radium application, sixty milligrams of this substance directly to the afferent vessel of the tumor; or, if necessary, to any portion of the growth that we may decide to irradiate. The radium is held in position for a period of fifteen minutes. During this time, the cystoscope may be held by the operator or by his assistant; but it is preferable to have it supported by a special arm or device attached to the cystoscopic table.

The radium is now in place; and those of you who wish to see it may look through the cystoscope. You will note the anemia produced by the sclerosis of the afferent vessel resulting from a former application of the radium. This will be followed by an ischemia, causing a cessation of the hemorrhage.

provided that enough of the element is applied to prevent the formation of a collateral circulation. This application may, of course, be followed by a slight reaction, as manifested by rise of temperature and localized pain for a few hours.

I now withdraw the radium and the cystoscope, and the patient will be returned to bed. Later on, I shall be able to decide by the appearance of the growth through the cystoscope, whether it is advisable to continue or to discontinue this method of treatment. It must be borne in mind in this case that if the radium is not effectual we shall be compelled to resort to surgery, which will consist in opening the bladder, applying electro-thermic coagulation, and subsequently giving radium through the open wound.

CASE III.—*Papilloma—Partial Cystectomy*. Mr. L., aged seventy-two, a patient of Dr. Joseph Hunter Smith, was referred October 12, 1919, on account of bleeding on urination. The hemorrhages had become quite profuse during the last few weeks. Cystoscopic examination disclosed a sessile tumor situated near the summit of the bladder, on the left side. The patient was advised to submit to a radical operation, but it was not until several weeks later that he consented to do so. On the 11th of November, 1919, I opened the bladder and resected the tumor, together with about one-third of the bladder wall, following the usual technique. A very stormy convalescence followed, the man remaining in the hospital for three months. During the first month he had, at weekly intervals, recurrent haemorrhages that were so alarming as to threaten his life. On the last occasion, I returned him to the operating room, reopened the wound, and applied the cautery to several bleeding areas. After this he made a very slow and tedious recovery. It affords me a great deal of pleasure to present this patient to you today, because I consider the result in his case as a victory for the surgical treatment of tumor of the urinary bladder. The pathological findings in this case indicated that the growth was a degenerating papilloma; yet the patient is now so well that he is able to attend to his daily duties as a clerk in one of the offices at the City Hall. Nevertheless, I intend to keep him under cystoscopic observation from time to time; and the slightest evidence of recurrence will call for the immediate cystoscopic application of radium. The patient claims that he has never been in better health in the last ten years.

CASE IV.—*Papilloma—Surgical Intervention, Recurrence, Radical Removal of the Second Growth, and Ultimate Apparent Cure.* Mr. M., age fifty-five, a patient of Dr. Carmichael, was referred in 1915, for hematuria, which had been present for but a few days. Cystoscopic examination showed a tumor about the size of an English walnut. It had a short and thick pedicle, and was located slightly above the prostate. The Wassermann test was negative. I thought it best at that time to submit the patient to surgical removal of the tumor. This was done. Ten months later there was a recurrence of the symptoms; and cystoscopy revealed a tumor, smaller than the original growth, and situated near its site. I decided to remove this growth surgically also, and performed the operation before the Clinical Congress of Surgeons of North America, at their meeting in Philadelphia in 1916. The usual technique was followed in both operations. The second was done four years ago; and since that time the patient has been perfectly well, both clinically and cystoscopically. This tumor likewise showed, on microscopic examination, the appearance of a degenerating papilloma. Mr. M. tells us today that he is able to attend to his daily occupation with comfort.

CASE V.—*Papilloma—Radical Removal.* Mr. R., aged fifty-two, a patient of Dr. Hess, of Philadelphia, was referred on January 19, 1919, with a history of a hematuria that had existed for six months, the hemorrhages occurring at frequent intervals during this time. The patient had lost twelve pounds in weight, as the result of the bleeding. There was no history of venereal disease, and the Wassermann test was negative. Cystoscopic examination revealed two tumors with short pedicles, situated between the ureteral orifices. I advised their surgical removal and, a few days later, operated, following the usual technique. The patient made an uninterrupted recovery, and has been perfectly well since, both clinically and cystoscopically. He has been able to attend to his work as well as formerly, and I am very glad to show him to you today. Pathological examination of the growth that I removed showed it to be a degenerating papilloma.

Would time permit I might show other cases. There is one point, however, that I wish to make. Insist upon knowing the cause of blood in the urine. It may be determined accurately by cystoscopy. By instituting proper treatment a cure may then perhaps be effected in many cases.

CLINIC OF H. L. NORTHROP, M.D.

CASE I.—TIC DOULOUREUX.

HERE is a middle-aged man who is suffering excruciating pain in the right side of his face. This pain is spasmodic, is confined to the region of the cheek, and the eye brow, and is so intense, so acute that he cannot bear to wash or even gently wipe his face. He has had similar attacks before; in fact, he suffered so much a dozen years ago that he submitted to an operation by which the peripheral portions of the maxillary and mandibular divisions of the fifth nerve were removed. Relief, of one year's duration, followed this operation, but the pain came back with unabated intensity. Of course, he has had all of his teeth removed; these cases always have.

It happens that I injected alcohol into this man's 5th nerve nine years ago and again five years ago, and he obtained satisfactory relief after each injection. And now the logical thing is to repeat the alcoholic injection.

To reach the maxillary division the hollow needle must be introduced just below the forward end of the zygoma for a distance of 5 cm., in an inward and slightly upward direction. When the point of the needle impinges upon the nerve the patient will feel additional pain in the trajectory of the nerve.

While talking to you I have been carrying out the steps of the injection and just now the patient exclaimed, "doctor, you've hit it." I now inject $1\frac{1}{2}$ cc. of 80 per cent. alcohol into the sheath of the nerve, withdraw the needle and seal the point of puncture with New Skin, which I prefer to the ordinary collodion.

Now this gentleman says that his cheek, his upper lip and the side of his nose feel numb—proof that the alcohol has reached the spot. The curative effect is obtained through the production of a fibrosis of the nerve trunk, and while its sensory irritability is removed, there is no paralysis of it. This patient should have another injection in a day or two, but he says his pain is so completely relieved that he will leave tomorrow morning for his home in Williamsport.

CASE II.—*Cirrhosis of Liver*. Here is a man, 58 years of age, whose abdomen, as you see, is greatly distended. Examination proves it to be tympanitic to percussion over the mid-

dle area and flat over the sides, or in the flanks. Moreover, there is a pronounced fluctuation wave transmitted across the abdomen. These signs, of course, tell us that there is free fluid in this abdomen.

Now, there is also a very positive history in this case of attacks of gall-stone colic, and the man has been a drinker of considerable quantities of whisky. From the evidence at hand, which points to trouble in the upper, right quadrant of the abdomen, I am making a longitudinal incision through the upper part of the right rectus muscle. Out comes a large quantity of clear amber-colored, watery fluid, which we must not permit to escape too rapidly, because its sudden release may precipitate hemorrhage into the peritoneal cavity.

I am now searching for a cause of the ascites and, as we suspected, that cause is a cirrhosis of the liver. Here is a very small, shrunken, nodular liver—a typical “gin drinker’s” liver. The gall-bladder also is contracted and shows a high degree of chronic cholecystitis. Upon opening it I find half a dozen small, black gall-stones. In such a case as this we should look upon these gall-stones as merely incidental and having little to do in producing so extensive a cirrhosis and its secondary ascites. At the same time it is true that sometimes gall-stones are etiological to cirrhosis, producing what is called calculus cirrhosis.

This man’s abdominal condition is so serious I will not remove his gall-bladder, but will introduce a tube into it for drainage. Nor do I feel justified in performing the Talma-Morison operation at this time, thereby making an effort to enhance the return circulation of the abdominal walls and viscera. I must be satisfied for the present to pack this operation wound with gauze and thus slowly drain off the ascitic fluid. Should this man survive today’s surgical effort, a Talma operation would be in order.

CASE III.—*Senile Gangrene of Foot.* This old man tells us that six weeks ago he had several sharp pains in the fourth toe of his left foot, and he noticed a small red spot on the end of the toe, which soon turned dark blue in color. Now the toe looks dry and is black and shrunken. In fact the whole distal half of the foot is in a state of senile gangrene, while the ankle is reddened.

This man suffers considerable pain, not only in the foot, but also in the calf and upper part of the leg. This pain comes

and goes and is known as intermittent-claudication. He has reluctantly consented to amputation, and I have his permission to amputate where my best judgment dictates. Evidently this man's circulation is very defective because of his advanced arterio-sclerosis: his blood pressure is 180, systolic, his radial artery is hard and feels like a row of beads, and there is no pulsation in his popliteal artery. Arterio-sclerosis has resulted in arteritis obliterans, which in turn has been followed by senile gangrene.

At what level should we amputate in a case of this kind? The upper third of the leg is (or was) considered to be the point of election for amputation in cases of gangrene of the foot. But here with, at the best, very poor circulation below the knee, I believe disarticulation at the knee-joint to be the point of election. And if this man's foot were the seat of diabetic gangrene, even the knee-level would be too low and amputation should be done in the lower third of the thigh.

I will, therefore, amputate (correctly speaking, disarticulate) in this case at the knee-joint, according to the method of that once celebrated New York surgeon, Stephen Smith. I now make two lateral hooded flaps of skin and fascia extending well below the condyles of the femur, like that. Next I divide the ligamentum patellae so, and then the capsule laterally and posteriorly, leaving the semilunar cartilages attached to the tibia. Now we look for bleeding vessels, but find none; even after releasing the pressure of the tourniquet there is no hemorrhage. The lumen of the popliteal artery is almost obliterated and the artery forceps crush and cut through its walls. It is ligated with difficulty, and I will introduce a deep, continuous suture of catgut to pick up any potential bleeding points back of the femur. A rubber drainage tube in the deep part of the wound, a half a dozen silkworm sutures to approximate the skin flaps, and the operation is completed.

CASE IV.—*Carbuncle*. Some carbuncles are of large size, but one seldom sees one as large as this, which spreads over the back of this big man's neck, down into his scapular region and up over his occiput. The diseased area is purplish in color and pus is oozing from many points in the center, which looks necrotic and gangrenous. His temperature is 102, his pulse is 110, and there is sugar in his urine. Evidently here is a very sick man, and a poor surgical risk. But risk, good or bad, surgery is demanded.

Therefore, under nitrous oxide and oxygen anesthesia I am cutting boldly into this strangled, sloughing tissue, going out close to its margins and through its thickness down to healthy neck muscles. Even then I am leaving an infected edge which is honeycombed and from which pus escapes when pressure is made upon it. I will now take a swab dipped in pure carbolic acid and thoroughly cauterize all of these pockets and undermined edges. Give me a piece of gauze saturated in carbolic solution, 1 to 20, with which I may pack this large wound, and then dry gauze and bandage to complete the dressing.

Let us not forget that carbuncle is often a manifestation of a serious underlying constitutional disease, such as diabetes, and frequently occurring in alcoholic and uric acid patients.

The after-treatment of this case will be very important, and will aim to combat both the diabetes and the toxæmia.

THE PRESENT DAY NEEDS IN CHILD HYGIENE.

BY

TALIAFERRO CLARK, SURGEON, U. S. PUBLIC HEALTH SERVICE.

(Read before the Homœopathic Medical Society of Pennsylvania, Sept. 21, 1920.)

OF all the public health programs, child hygiene makes the one greatest appeal to the hearts of the community. It offers to the public health worker the simplest and easiest approach to the families of his district. Health work for children, too, is much easier to organize than health work for and with adults; but once committed to a program for the health of the children the rest of the public health program may be introduced step at a time in a logical manner.

Child hygiene, by beginning one generation ahead of disease and by treating with the causes of bad health rather than with the effects, offers the most certain way of assuring a healthy adult generation.

Child hygiene, therefore, as the great entering wedge for the entire public health program and as a means of assuring a generation free from disease, occupies a peculiarly strategic position in the public health field.

THE SIZE OF THE PROBLEM.—Children from birth to 14

years of age comprise approximately 32 per cent. of the entire population (the Census of 1910, Vol. I, p. 304). Although child hygiene concerns a child from before conception until he is graduated from the common school grades, the child hygiene program is concerned with him for a period of about fifteen years, during which emphasis must be placed on certain phases of child health supervision at different age periods in a given environment.

BIRTH REGISTRATION.—One of the first tasks in a child hygiene program is to assist with the registering of babies' births; in other words, to count the babies. Only twenty-three States have satisfactory birth registration laws and register at least 90 per cent. of all births. In eighteen other States birth registration laws are on trial and five States either have no birth registration laws or these are so imperfectly executed that they are not included in the birth registration area. In States where vital statistics are sufficiently accurate, the Director of a Division of Child Hygiene can begin with a known problem, relating to a definite number of children born each year, and a definite number dying from specified causes. Without this information his work will be of hit or miss character, with no very tangible results to show for the time and energy expended. Being a physician myself, and the son and grandson of a physician, I am well aware of the disinclination of physicians in general to write letters and make reports, hence the great laxity of physicians in reporting births.

Furthermore, even in States with ample registration laws it is difficult to secure conviction of physicians who are penalized under the law for a failure to report births. The Division of Child Hygiene can be of great assistance to the Division of Vital Statistics in the State Boards and Departments of Health by creating a State-wide sentiment among the mothers, demanding prompt and active reporting of births by the attending physician, which will be more effective than the mere enactment of a law governing such matters. The issuing of a birth certificate in case of reported birth, with an accompanying leaflet stating the advantage to the child of an official birth record, will do much to create such a sentiment among mothers and prospective mothers.

INFANT MORTALITY.—There has been a gradual decline in the percentage of all deaths from all causes of children under 1 year and 5 years of age which occurred in the regis-

tration area. However, the percentage of deaths of children in less than one month, one week and one day after birth shows but slight variation from year to year during the last ten years. An apparent exception to this may be noted for the year 1918, when the percentage of deaths of children less than one year and one month of age was 13.4 per cent. and 5.9 per cent., respectively, as compared with 16.05 per cent. and 7.4 per cent. for the year 1917. This departure from the normal variation is probably accounted for by the disproportionately large number of deaths from influenza in the older age groups in 1918.

The death rate for the entire population (mortality statistics for 1918) is 18 per thousand, including the soldier deaths in the United States, and 17.7 per thousand not including the soldier deaths. Of this death rate, deaths of children 14 years of age and under, comprises 25.9 per cent. of the total deaths from all causes, and of children one year of age and under 13.4 per cent. If the reported still-births are added to this number of babies dying under one year of age, this percentage would be largely increased. For example, according to a recent report by Dr. Adelaide Brown on infant mortality in San Francisco, in 1919, infant deaths, exclusive of still-births, amounted to only 58.2 per cent. of all infant deaths including still-births.

What is more striking, however, is that according to the 1910 census 11.6 per cent. of the population is under 5 years of age and 2.4 per cent. under 1 year of age, which proportions are probably representative for succeeding years. From this it is seen, therefore, that in 1917, 22.6 per cent. of all deaths occurred in 11.6 per cent. of the population, representing children under 5 years of age and 16 per cent. of all deaths from all causes occurred in 2.4 per cent. of the general population represented by children under 1 year of age. Certainly if there is a health problem greater than this, it has not yet been recognized.

Of three babies dying under one year of age, approximately one is a still-birth; one death occurs within the first few weeks of life from causes directly chargeable to prenatal conditions, and the other death is chargeable to all other causes combined. Thus showing that two-thirds of the infant mortality problem is something which cannot be reached by the ordinary forms of child hygiene activities, children's health centers and educational programs.

To these two-thirds of baby deaths under one year of age chargeable to prenatal conditions should be added the large numbers of unreported still-births and the other uncounted hosts of deaths occurring during intra-uterine life. This would probably bring the total up to a figure comparable with the death rate of the entire population. And yet this is a field which is largely untouched by any baby health activity, except a few clinics for the syphilitic which are just being opened up by some of the more progressive bureaus and divisions of child hygiene.

PRENATAL CARE.—A child hygiene program must work backward, providing acceptable service in prenatal supervision. For example, quoting from Thavies:

"If systematic intense measures could be applied to every mother who has syphilis, while she is carrying the child, we would witness an immediate and surprising decrease in the transmission of the infection to offspring. So effective is this treatment of the mother before the birth of the child that it is the bounden duty of every physician called upon to deal with pregnant women to be familiar with the essentials of syphilology and to secure for those under his care proper expert investigation and treatment if the findings show the presence of the disease."

The terrible toll of syphilis in infant life has been emphasized by syphilographers over and over again, a number of whom are quoted herewith to show the important bearing of prenatal supervision on venereal disease control.

WILLIAMS.—183 out of 705 still-births were caused by syphilis.

JEANS.—Seventeen per cent. of the children of syphilitic parents are spared; 30 per cent. die at or before birth; 40 per cent. die at an early age; 5 per cent. survive to develop syphilis later.

SPOHR.—Quotes European and American statistics ranging from 6 per cent. to 33 per cent. of syphilis among newborn children.

It is not alone from the standpoint of a single disease that prenatal supervision should be exercised, but every effort should be made to provide adequate obstetrical and lying-in facilities and to safeguard the general health of the expectant mother, so that she in turn may live and be strong to protect the health of her baby. In addition she must be taught how to feed, to clothe him, to protect him from communicable diseases, and to give him most careful supervision during this most important period of his life.

The health authorities should also be alive to the need and prompt in promoting measures for regulating the employment and safeguarding the health of expectant mothers engaged in industries. The higher infant mortality rate generally observed in industrial cities may be largely accounted for by lack of attention to the baby by the working mother, especially from the standpoint of breast feeding. In the report of a recent survey of 10,000 farm homes in 33 States of the North and West by the Department of Agriculture working in conjunction with the State Agricultural Colleges, it is stated that 7,467 individual reports show an average of but 1.18 children under 10 years of age for each house and only 0.89 between 10 and 16 years of age. The small number of children in farm house excites the following comment:

"Child life is at a premium in the rural districts, and for the future of our agriculture, if for no other reason, an intelligent effort should be made and as much money expended to safeguard the child crop on the farm as to safeguard other crops that have to do with building up the farmstead."

The cause of this has been shown by a number of investigations to be due to lack of prenatal care and of obstetrical and nursing service in rural districts. In a number of districts, owing to scarcity of population, this service should be provided by the State.

INFANT CARE.—A child hygiene program should logically start with a healthy baby. To be born healthy is more than half the battle, but it would be useless to start with a theoretical proposition or abstraction. To succeed a proposed child hygiene program, in the average community, must begin with a definite, concrete object, something which everybody may see and understand. In a number of States, with varying degrees of emphasis, this is taking the form of securing active registration of births; establishing infant welfare stations and promoting measures for the care of the babies in the home; employing public health nurses to instruct mothers in maternal nursing, artificial feeding, and in the general care of infants; safeguarding the public milk supplies by establishing and supervising private and municipal pasteurization plants, and by other measures; enacting and enforcing laws to prevent blindness in the new-born; and exercising sanitary supervision of foundling asylums, hospitals, day nurseries, industrial nurser-

ies, kindergartens and other institutions and homes in which infants are cared for for remuneration.

On a final analysis, the care of the infant in the home is an individual rather than a community problem which can be best met by inducing mothers to nurse their babies.

PRE-SCHOOL AGE.—Children 2 to 5 years of age comprise 9.1 per cent. of the population. Despite their relatively large number probably less health supervision has been exercised over children of this age than any other class of the population.

In addition to the general measures for safeguarding the health of infants which are applicable to children of this age, the child of pre-school age deserves special attention from the standpoint of nutrition. Probably in no other period of life are such strong influences on the future physical and mental health of the child met with as at this period of child life. The establishment of centers where the children may be brought by their mothers for examination and advice regarding their physical condition, and for directions for proper feeding, is not sufficient in itself because at this age the child begins to be a community problem. He is most susceptible to communicable diseases and is more directly influenced by environment. Therefore, no health center designed for children of pre-school age will be successful without the provision of an adequate follow-up system to visit their homes in order to see that the advice given in the center is carried out and to assist in correcting home conditions inimical to health. Furthermore, in probably the majority of the cases malnutrition will not be corrected simply by advising the mother and supplying her with literature relating to this condition. She needs the actual demonstration of food selection, combination and preparation in the home, in addition to the advice regarding the personal hygiene of the child.

THE CHILD OF SCHOOL AGE.—For a child in school the child hygiene program must require sanitary school buildings, must make provision for the teaching of health habits and for the detection and correction of health defects. Such supervision should include, therefore, the detection and control of communicable diseases; the detection and correction of physical defects, including defects of sight and hearing; the practical instruction of children in general and personal hygiene, including proper food habits and the foods necessary for health

and growth; the medical examination of every school child once a year and of children about to leave school; the mental examination of school children to determine and prescribe more suitable teaching and treatment for children who are unable to profit by the usual courses of study; and supervision of the school environment, including recreational facilities, to prevent and correct faulty seating, illumination, ventilation, heating and sanitation, and co-operation with the parents in maintaining a sanitary home. In addition to these special items there should be co-operation of the State and local health and educational authorities to promote physical education; to secure clinical facilities for the treatment of minor ailments, and the correction of physical defects, including dental care; the co-operation of local health and educational authorities and other recognized agencies to secure the establishment of open-air or special classes and schools for children suffering from extreme malnutrition and anemia, cardiac diseases and tuberculosis, and for the establishment of hot school lunches, both in city and country schools. Unfortunately, owing to unsatisfactory school laws in many States and the conflicting claims of jurisdiction by health and educational authorities in supervising the health of school children, such a program at present is attempted only in a few specially favored communities.

From data compiled from responses to a questionnaire on the subject recently addressed to State health and educational authorities by the Surgeon General of the United States Public Health Service, only twenty-nine States and Territories were found to have laws on school medical inspection which designated some State agency to administer the law. In fifteen States the Department of Education and of Health co-operated in some degree in the administration of school medical inspection laws; in six States they are administered by the Department of Education, and in eight States by Boards or Departments of Health. In nine States no State authority is designated to administer the school law, though certain duties are imposed on the local authorities, and in nine other States there is no specified law regarding school medical inspection. In most States the need is very great for the enactment of a school medical inspection law which shall be mandatory not only to provide facilities for school medical inspection, but also define the school health functions of the State Departments of Health and Education and co-ordinate their activi-

ties according to their vested powers; the one to restrain and control, hence to exercise sanitary supervision and examine for communicable diseases and to discover and correct physical and mental defects; the other, to educate and instruct by inaugurating classes in physical training, including courses in general and personal hygiene in the school curriculum, and providing instruction in domestic science to embrace, in addition to instruction in the preparation of food, teaching food values from the standpoint of health.

STANDARDS OF SCHOOL MEDICAL INSPECTION.—The results of medical examinations under the selective service law attracted nation-wide attention, because of the startling number of young men who were found physically disqualified for military service. In isolated instances school medical examiners, as a result of their examinations of school children, had predicted that this would be the case. This experience serves to emphasize the need of uniformity in the method of medical inspection and in recording the results of medical examinations, so that no matter where made these results shall be comparable. The value of school medical inspections made in a uniform manner throughout the country can scarcely be overestimated. For example, we are quite accustomed to speak glibly of the normal physical development of children of a given sex and age period, according to certain standards which are but the average height and weight of all classes of children, including the lame, the halt, those with twisted spines, undernourished children and children of different racial types. Owing to the great size of this country, the wide range of climatic conditions and the varying food supply of different sections, and also because of the impress of the foreign immigration which attained such enormous volume in the years preceding the war, it is a difficult matter to arrive at a standard of physical development for the country as a whole. However, measurements made of large numbers of school children in a uniform manner will enable us to arrive at an approximately correct standard of development of children residing in different geographical areas.

THE CHILD IN INDUSTRY.—When a child enters the industrial field the child health program needs to insure sanitary surroundings, protection from exploitation such as would undermine the health, and make such other provision as would conduct the child through the adolescent and post-adolescent

periods well into healthful, useful manhood. To be successful such a program must combine medical knowledge with social service, and the co-operation of all agencies should be secured in promulgating a model child labor law, based on physiological principles, in securing adequate medical supervision of children in industry and causing the physical examination of children about to engage in industry and periodic examinations thereafter.

THE MENTAL HEALTH OF CHILDREN.—Approximately six persons in every thousand in the general population of the United States suffer from some mental defect or disorder. Examinations of school children by officers of the U. S. Public Health Service have revealed a number of them who are insane and a still larger number of them who are potentially insane. Furthermore, these investigations have shown that from 0.3 per cent. to 1.3 per cent. of the children attending school in the communities visited were feeble-minded, and still others in whom the defect is in the volitional and emotional fields rather than in the intellectual. These latter are potentially more anti-social in their conduct in later life than the feeble-minded. It is a well-known fact that peculiarities of conduct and eccentricities of manner which are normal to the vast majority of individuals when exaggerated are but the symptoms of certain types of insanity. Furthermore, certain habits of thought and conduct easily recognizable in young children, and, therefore, potentially correctable later become crystalized into fixed habits, which, in adult life, may prevent the individual from properly adjusting himself to social customs and usages. This is a field of health supervision which is largely uncultivated.

Only a few States have made adequate provision for the care of the feeble-minded. The juvenile delinquent who is largely feeble-minded or psychopathically inferior is frequently judged without having received a mental examination, and handicapped school children are largely left to struggle through courses of study arranged for normal children without the benefit of advice based on a mental examination to determine their mental status.

NEGLECTED AND DEPENDENT CHILDREN.—The intimate relationship between medical, psychological, sociological and economic conditions is frequently typified in the case of the neglected, dependent and handicapped children. There is a

need for wider investigation to determine the special types of dependency due to specific handicaps, and note the relationship of this problem to the prophylaxis for scarlet fever and school quarantine regulations concerning this disease and deafness in children; of gonorrhoea in the mother, no matter how acquired, and ophthalmia neonatorum and lifelong blindness in children; of venereal diseases, blindness and mental defects; and of the spread of tuberculosis in unsanitary homes, due to ignorance, lack of care, illiteracy, mental defect and allied conditions. Here, again, only a few States are making any attempt to provide adequate institutional care and medical supervision for this pitiful class of the population.

• **ORGANIZING CHILD HYGIENE BUREAUS.**—Under the mistaken conception that child hygiene “has something to do with the baby’s bottle,” there has been a tendency on the part of some city and State boards and departments of health to leave the organization of a Division or Bureau of Child Hygiene to the very last, to place such a division or bureau in charge of a nurse or even lay woman and to give it the ragged end of appropriations. A child hygiene program proper, involving as it does the entire cycle of life, concerned as it is with every phase of sanitation, and requiring inquiry into every field of public health, touching with every other department of State activities, and merging into the broader fields of sociology, education, economics and State medicine is a program big enough to challenge the skill of the best trained men and women of the combined public health and medical professions, as well as the foremost place in the public health organization and budget.

UNIFICATION OF ACTIVITIES.—There is no lack of child hygiene programs. Practically every civic organization has one and virtually all of them are directed to one-third of the baby deaths, with the exception of public health organizations providing prenatal supervision in a limited way. The great need is to pull all these organizations together, and to give them scientific direction under centralized administrative control. The combined support of private organizations behind well-directed public health education as to the real needs of the Divisions of Child Hygiene would enable health departments to establish them on an adequate basis successfully to attack some of the more fundamental problems relating to child health. Pediatricians are beginning to recognize these

fundamentals more and more, but unfortunately the best pediatrician has not always the public health view point. It is important that doctors trained in public health take the lead and not leave this important work to untrained and unscientific direction.

In maritime circles it is quite common to refrain from passing judgment on the qualities of a new vessel until after she has "sweetened" herself. That is, until after all parts of her structure have been tested and adjusted by a heavy storm at sea. No doubt many of you have read Kipling's short story of the "Ship that Found Herself," which is based on this bit of maritime philosophy. You will recall that the good ship "Dimbula" met with a stormy passage on her maiden voyage, and while being buffeted and battered, tossed and twisted by the waves, each part of her complained in many different keys as they were subjected to unusual stress and strain. Finally, on arriving at her destination, all salt incrustated and somewhat battered, but still complaining, she was compelled to stop for a tug boat to pass, and on starting again an entirely new note was struck in place of the many. The good ship "Dimbula" had found herself. In other words, during the stress of the storm, all the manifold parts of the vessel became adjusted to function in unison as one harmonious whole. Similarly much health work, especially in the field of child hygiene, is now being done by many different agencies, both official and volunteer, and unless these adjust their several activities in a united movement the good ship Public Health will be slow in finding herself.

THE PHYSICIAN'S PART IN THE PUBLIC HEALTH PROGRAM.

BY

EDWARD MARTIN, M.D., COMMISSIONER OF HEALTH.

(Extemporaneous Remarks Delivered before the Homœopathic Medical Society of Pennsylvania, Sept. 21, 1920.)

I WISH to express my appreciation of the honor done me in affording me the privilege of meeting with you men who have been and will be so largely serviceable to the State in public health work.

The function of the State Health Department is prevention and, incidentally only, cure. Before the child is born,

and following this into babyhood, infancy, early childhood and school life, finishing only when it has attained maturity, a healthy, strong, robust individual, we have prevention as our concept. The matter of the Program of Child Health in the State of Pennsylvania will be discussed later by Dr. Ellen C. Potter, Chief of the Division of Child Health.

The Relation of the Health Department to the physician is and should be that of complete and entire co-operation. Sometimes I receive a letter, and sometimes a verbal communication, from a doctor, saying, "I do not want to do this for you. It requires too much time, and too much trouble." When the doctor reports a case, taking his time and trouble, he does not do it for the Department of Health, but for the citizens of Pennsylvania; and just as much for himself and his own family as for anyone else. It is a citizen's duty, imposed upon him by his position and his technical knowledge. The Department is your Department, made by you for you, and belonging to you; and the relation that the profession holds to the Department is that it is a part of this great Department.

Another way in which you can assist the Health Department and the cause of public health is by your good work. By this I mean as individuals, in your State Society and in your County Medical Society. I want to make a specific request that you play your part as citizens of Pennsylvania. What do we want from you in groups? We have laid out certain large classes in regard to public health work, and we hope that each month each county medical society will spend fifteen minutes on this subject—and that is all. We want you to have read by someone before your county medical society each month a short paper of one thousand words, clear as crystal, which we will send you. We want you to criticize and discuss it, and tell us whether you think it is rational and feasible. Let us know whether there is anything better; whether we are doing it here; and if not, how we can. We want your judgment as to sound common-sense treatment; and when it comes to a question between sound common-sense and the laboratory, we should follow sound common-sense. Spend fifteen minutes in this way in your county medical society meeting every month.

The second thing that we want you to do in groups is this: There are, throughout the State, transmissible diseases.

What shall I say of the carelessness that sometimes arises in the medical profession concerning these diseases? We have no tolerance for that commercial spirit which sometimes arises, because it promotes the spreading of these diseases, and therefore, endangers the whole community. We have the right, we have the power to enforce proper health regulations; but we want each county medical society to take up the evil and discipline themselves, and advise us what they want; and we will do it. In other words, we want every county medical society in the State to be a factor in the better administration of the health laws. That is all we want in group work. These are two simple, practical things that you can do; but they will not be done, unless each county medical society takes the matter up and says, "It is what we will do," and does it.

Now as to the individual work: We have not bettered our diphtheria statistics in the last twelve years. We can do it; and we will do it, with your help. Every man here can do something to add to the honor of Pennsylvania in this work. How? Early diagnosis; prompt, adequate treatment; the Schick test; immunization by antitoxin, which is entirely successful. By these means, it can be entirely eliminated; and it will be, through you. There has been no improvement within the last ten years in either morbidity or mortality.

Then, syphilis. We have eliminated syphilis as a public menace. How? By tracing the source from which each man or woman gets it—not to bring trouble on the person who gave it and the one who comes to you, but to cure the patient. Unless we do that, he will never get well. If each focus is found and treated until it becomes non-contagious, the disease will be eliminated. The method will be given you by Dr. B. Gans. It can be done, but only by your help.

The Exanthemata.—If we cannot cure them we can limit their spread. Is it done? I will not ask. Why not? Up to you again.

Tuberculosis.—We have absolutely made no progress in tuberculosis. We cannot. But I believe that by training each individual from childhood, within twenty years we may be able to show some reduction. Today we treat the tuberculous child and bring it up to standard. We take the early tuberculous case and stop its progress. That is common-sense summed up as regards the tuberculous.

We will now call on Dr. L. S. Gans, of the Division of Venereal Diseases.

ADDRESS OF DR. S. LEON GANS.

DIRECTOR OF THE DIVISION OF VENEREAL DISEASES,
HARRISBURG, PA.

THE plan of the Venereal Division I shall try to present definitely so that you may have a correct understanding of the physician's part in the elimination of venereal infection. The attack on venereal infections is important for two main reasons: First, our Federal statistics show that syphilis is killing more each year than any other one disease. In the mortality statistics based on a population of one hundred thousand syphilis stands two hundred and twenty-two deaths due to this disease. The next in numerical order is tuberculosis, with a rating of 141.6. Therefore, this is one logical reason for an attack on venereal diseases.

The second reason is that it is quite possible to eliminate venereal disease. Therefore, the attacks become a question of policy, not of inclination. The Department of Health has a definite relation to the profession, one of co-operation. Compare the incident of typhoid in the Spanish-American War to that in the World War, and also our smallpox epidemics in the past with the number of cases at present. The Department alone would have been helpless to bring about these results. Where we saw thousands of cases during the Spanish-American War, we saw practically none in the World War. That was not accomplished by any one Department of Health, but by the medical profession. Therefore, the problem of venereal disease elimination as a public health menace resolves itself into one of co-operation. It is up to you to assist us.

The State Department of Health has outlined certain plans, which it has tried out, the fundamental principle being that all cases of syphilis are to be treated, not by the State, not in free clinics, but by the private physicians. Therefore, to make this a workable plan, we have divided the patients into three classes: Those to be treated by the private physicians, those to be treated in a pay clinic or hospital, and those to be treated in a free clinic.

In order to do this, we ask our county medical societies to fix a minimum fee for the different treatments used in venereal disease cases, so that when a patient who is able

to pay for private treatment applies to the clinic, he may be referred to a private doctor. The names of men doing venereal disease work are listed with the clinic and patients who come within the above-mentioned class are sent in rotation to these doctors.

We now have one hundred and twenty-three State Clinics and clinics co-operating with the State. The State Clinics, of which we have twenty-eight, are brought up to standard. At these clinics the physicians are always welcomed. They are urged to visit them for the purpose of observation, and to work if they so desire. They should be looked upon as belonging to the profession.

This is particularly valuable in rural districts, where the physicians are not connected with large hospitals.

The doctors having decided a minimum fee, the social service worker does not say, "You must go to a doctor who charges so much," but she refers them to a doctor, who makes his own fee in accordance with the means of the patient. We refer patients to the doctors in alphabetical order, at the same time trying to keep a geographical classification. The patient goes to the doctor, and has the same status as though sent by an individual to the physician. The only thing that we ask of the doctor is to report the patients should they become delinquent. The State will undertake to do the follow-up work, insisting upon the patient's returning to the doctor for treatment and remaining with him until cured.

The second request that the State makes, is that the doctor shall report to the nearest clinic, when possible, the infecting source, just as though the physician had been called in to see a case of typhoid. Under such a condition, he would try to locate the source of infection and report it to the Board of Health. If the physician would do the same thing in the case of syphilis, the Department of Health could go after the source of infection and cure it.

One other job that we ask the physicians to take on themselves is in the county medical society, to nominate certain medical men who are willing to act as speakers in our publicity and educational campaign. We find that there are men interested in this work and willing to do it; and the office will be in touch, from time to time, with the various county medical societies, and we trust that we shall get their co-operation.

The question of having a reporting law has always been

felt to be unnecessary in Pennsylvania. We may have the law, but it has always been felt that the co-operation of the medical profession, as shown in the past and which we feel sure we shall continue to have, renders it unnecessary to compel the doctor to report his venereal cases, except when they become delinquent. That same thing refers to your private cases.

Col. Martin has mentioned the subject of symposiums that will be held from time to time by the county medical societies. There will be sent to the doctors each month just one hundred words on the subject of syphilis. We have made abstracts from journals abroad and here, and hope to get to the profession, in this way, the last word on the subject of syphilis.

The plan is not theoretical, but workable. It is impossible to give more than a general outline, and to appeal to the individual doctor and the county medical society to state problems of their own, so that we can get together and assist in solving problems peculiar to their locality.

ADDRESS OF MR. J. C. FUNK.

REPRESENTING U. S. INTERDEPARTMENTAL BOARD AND PENNSYLVANIA STATE HEALTH DEPARTMENT.

WHEN Colonel Martin instituted his very definite offensive against the venereal disease problem in Pennsylvania, he became aware of the necessity for a well-rounded program. He realized that the medical feature was very important, but he equally realized the necessity of getting at the sources and applying repressive influences on those elements that bring the cases to the physician. This involves law-enforcement and is directed against that class of people who are, by occupation and habits active sources of infection in a community, namely, the prostitute, the street-walker, and the other various individuals of the male sex who are commercially connected with that vice.

The statistics of the United States Government and of Pennsylvania have definitely proved that a great majority of the people belonging to this type are infected with either one or both venereal diseases; and it is quite logical to assume that

if it is possible to make them non-infectious and remove them as foci, we shall have made a vital step forward.

A plan has been adopted that involves the closing of every house of prostitution in Pennsylvania. It was, however, considered unwise simply to go into a city where a segregated district existed and ask the officials to close it, and thus in disseminating its people put them outside medical control. Therefore, we have not only the legal, but the medical feature as well in law enforcement.

The first thing is to discover where these districts are. This is not difficult. Once the foci of infection (the inmates of that district) are found, the necessary evidence to present to the grand jury for conviction is obtained. The State police have been found very efficient as aids in this work. Contemporaneously the medical machinery of the State Health Department is put in motion, which involves the State quarantine, which in the venereal cases, applies only to the public health menace class already referred to.

There are three ways and two places in which quarantine is applicable under the present law as related to venereal diseases. The first is in the house or upon the premises of the inmate, either with or apart from the family. The second is in an institution set aside and definitely provided for taking care of this class of people.

The arrest is made, and the patient is either committed to jail or allowed to remain out on bail for his appearance at hearing of court. The health officer, working through the State office, applies the quarantine. If there is a definite place set apart for the care of such people, they go to that institution, and cannot get out until the State or local quarantine officer says that they are no longer a public health menace. If no such place exists, they are quarantined in their own residence. That removes the public health menace as a legal, and as a public health offender. But we do not stop there. All these houses are owned by someone. The State criminal law has a provision known as the "Eviction and Injunction" feature, which means a direct attack on the owner of the property. Therefore, when the medical and the legal propositions are attacked as applicable to the inmates, at the same time the owner is attacked and brought into court, to be forever enjoined against using his house as a place of prostitution.

The program thus involves, first, eliminating the sources

of infection, reducing the trouble for the medical man in the first instance; secondly, taking the cases that come to our knowledge as medical cases; and, thirdly, making a direct attack against the property owner, so that the real estate involved cannot be any more used for purposes of that kind.

Together with this is the more indirect, but just as important problem that has to be solved—the problem of the clandestine prostitute, who does not operate in known houses; but the district is attacked first, and then the clandestine features attacked.

Dr. Gans has suggested that I explain in detail the quarantining of the house. The same practical feature that is involved in quarantining for other diseases is employed. A yellow card for chancroid, gonorrhea and syphilis is used, when an inmate with any of these diseases is found in a house, and in addition is a public health menace. There are two ways in which we can quarantine the patient. We can quarantine her in her room, and thus remove the possibility of embarrassment to the family generally by placing the quarantine sign on her room; or, in more aggravated cases, we quarantine the outside of the house.

Now just one other point: The question might arise in the minds of some of you as to the success of quarantine. Quarantine is a medical measure and has absolutely nothing to do with courts. No legal powers can remove it. The quarantine officer is the only person capable of lifting it.

THE PROGRESS OF CHILD HEALTH IN THE STATE OF PENNSYLVANIA.

BY

ELLEN C. POTTER M.D., HARRISBURG, PA.

Chief of Division of Child Health.

(Read before the Homœopathic Medical Society of Pennsylvania, Sept. 21, 1920.)

It is a great opportunity to be able to present to you the problem of child welfare as we find it in Pennsylvania, and also to place before you our program for its solution. I was much interested in listening to Major Clark, to hear that the points he emphasized were many of them those that we had taken up and were pushing to the best of our ability.

Realizing that we cannot solve the problem unless we

have the co-operation not only of medical men and women but also of lay people, whom they can influence, we find that it is important for us to get in touch with you, share with you our full program, and ask for your help on points that we are already attacking.

When we look at ourselves and see what pitiful specimens we are physically with our bad posture, deformed and crippled feet, artificial or missing teeth, indigestion and other defects too numerous to mention, I think that our appreciation of the failure of our parents, and those associated with them, to form any child health program when we were young is sufficient to make us resolve to devote ourselves unremittingly to the task of helping the children of our generation to come to full and healthy manhood and womanhood.

We have heard reference made to the physical findings of our Draft Boards. One-third of our young men were unfit for military service and we did not disqualify for curable venereal diseases. Most of these young men were unfit because of preventable defects. If their parents had tried to correct these defects when these young men were boys or little children, they would have been fit for service.

In the public schools of Pennsylvania last year, out of every one hundred children examined, seventy were found physically defective. Of those defective only fourteen secured any relief during the year. This leaves defective a balance of fifty-six in one hundred children, instead of thirty-three in one hundred, as our former Draft Board's statistics indicated. Therefore, our present generation of children is in a fair way to be more seriously handicapped than the previous generation.

Our most serious problem, however, relates to our maternal and infant mortality rates, both State and National. We have not in years made any reduction in our maternal mortality rate, while in the interval we have reduced the mortality from diphtheria nearly one-half because we have applied the laws of medical science to that disease, and the same is true of malaria, typhoid, yellow fever and other diseases. But we have permitted women, generation after generation, to go on dying unnecessarily because of lack of instruction during pregnancy and because of lack of care at the time of delivery.

The higher the infant mortality rate in any community, the lower is the sense of social responsibility of that community for the welfare of its children. The last annual report on

infant mortality in the United States shows a rate of 87 per 1,000 living babies born. We show an infant mortality rate for 1919 of 100; New York City shows a rate of 81; the State of Oregon 63; New Zealand 48. There are those who say that it is not just to compare the rate of New Zealand with that of the United States since its territory is so much smaller, its climatic conditions better and its population under two million as against the population of one hundred and five million in the United States. This is undoubtedly true but if each community in this great Commonwealth resolves to "brighten its corner," resolves to reduce its infant mortality by 40 per cent. as it can by perfectly well known methods, we shall, as a State, have a record of which we need not be ashamed. If Philadelphia with all its bad housing and congested quarters and its foreign population can bring its infant mortality rate down to 89.9, and if New York with even worse conditions can bring it down to 81, there is no reason why every local community in Pennsylvania cannot better its infant mortality rate and bring it down to something within reason.

Any comprehensive program of pre-natal care will reduce maternal mortality 75 per cent.; infant mortality under one month 40 per cent.; still births by 25 per cent., as has been demonstrated in New York.

Dr. Josephine Baker, Chief of the Bureau of Child Hygiene, Department of Health, New York City, says that if any community will do but one thing intelligently, consistently and persistently to improve sanitary conditions over a period of months, that community will inevitably reduce the deaths among infants, for the slightest improvement in community sanitation or the slightest increase in knowledge on the part of the mother as to the care of her baby will make life safer for the little children.

It is inexcusable for any State or nation to have an infant mortality rate of 100, and it is equally without excuse that the United States should be fourteenth down on the list of civilized nations in its maternal mortality rate. There are only two communities worse than ourselves in this respect: Spain and Switzerland. Something must be done quickly to redeem ourselves. What are we planning to do, and what are we actually doing here in Pennsylvania?

You may not be familiar with the plan of health organization that Dr. Martin, Commissioner of Health, seeks to

develop. As with other prophets, there are those who say he is "beside himself," that he is "crazy" because they do not see how it can be accomplished. Where there is no vision bigger, broader and higher than anything you think you can accomplish, no supreme effort is ever made to accomplish anything. It is his vision that we can harness up and co-ordinate the voluntary health units working throughout the community, that we can organize and co-ordinate the will to do good which is always present in the hearts of the people and that we can co-ordinate all this power with the already legally constituted health forces of the State, so that there shall result a co-ordination of effort along a multitude of lines, all directed to safeguarding the health of the people.

With that end in view, we have in each county a Medical Director, whom we hope some day to call a *Health* Director, and associated with him is a County Health Committee, the chairman of this committee being a woman, for we realize that women have a keen sense of social responsibility; they have more free time and have a genius for organization, and moreover, they are intensely interested in the problem of child welfare. That Council has associated with it a County Health Committee composed of representatives from all organizations concerned with public welfare; its duty is the development of community and child welfare throughout the county; the development of a health and morals program which shall co-operate in the elimination of venereal disease; the passage of proper laws and ordinances in local communities, thus safeguarding the health of all the people.

It is their duty also to bring together all data relating to institutions and agencies at work in the county on problems of public health and welfare and to publish this in readily accessible form for the use of social workers in the county. To this the State will add all the State agencies on which the local community may call for help and having listed all these agencies it is our hope that these will be published by counties to stimulate interest in and knowledge of all health agencies.

This Central County Committee is expected to organize sub-committees in all local communities; and we now have in some counties many townships, boroughs and cities at work on their own individual problems, with their committees on child welfare, health and morals, laws and ordinances and health education in general.

What are we asking these county communities to do? First, to attack the problem of infant mortality by establishing child health stations, at which mothers are taught to keep their children well. To again quote Josephine Baker: She says that the surest way to reduce the infant mortality rate is to "keep well babies well." We find that a very large proportion of mothers do not know how to keep a well baby well. The child is born well; but bad hygiene, bad sanitation, etc., almost immediately start the baby on the road to sickness.

The ultimate aim of these child health stations is not merely the saving of life but conserving health so that the pre-school child shall be presented at the school room door 100 per cent. physically fit. We wish to urge you to encourage the establishment of these clinics in your community.

We have found in some communities apathy, and even hostility among medical men and women to these clinics. They say, "Here comes another free medical service, and we are already doing more charity work than we are able." The rule of health stations is, however, that no sick child shall be treated, but shall be referred to the proper agencies for treatment, the hospital, the family physician, the Visiting Nurse Association or some other agency already at work in the community for the care of the sick child. Therefore, the "well child" center is a clearing house for the distribution of sick children to the proper agencies, while at the same time an effort is made to diminish the incidence of disease.

Then we are developing the pre-natal clinic. Any community will take up enthusiastically the work for a well baby clinic; but very few, for a pre-natal clinic. A mother who brings her child, from week to week, to the nurses and the doctor, at the Child Health Station, will, when she next becomes pregnant, naturally ask for instruction from those she has come to trust; so gradually these pre-natal clinics will develop throughout the community. In no case will the pre-natal center undertake the confinement of the case, the patients being referred to the doctors of their choice or the hospital or midwife; and all cases presenting pathological symptoms will be referred to the physicians of the community. The maternity centers will place at the disposal of physicians a reliable agency through which the drudgery of the pre-natal follow up can be carried on with a minimum of expense and inconvenience to both patient and physician.

Among our major aims for the near future is the development of a public health nursing service on a county basis. The public health nurse is essential to the development of any comprehensive plan of public health work. There is great danger of over-lapping in the work as well as danger of serious omissions if the employment of these nurses is undertaken by individuals, organizations or corporations in a community without adequate recognition of the work already under way and without a realization of the extent of the field to be covered.

In one of our prosperous counties we found fifty-one nurses working for different organizations—more than enough to do the work of the whole county, but because of lack of organization and co-ordination there were many and serious lacks in the public health work in that community.

As you have opportunity to encourage the employment of public health nurses in schools, health centers, visiting nurse associations, etc., do so, because of the incalculable help they will be in solving our child health problem and in doing so urge each agency to link up definitely with the State program and to co-ordinate their activities with each other and with the State.

We are endeavoring also, to increase the percentage of correction of defects among school children by means of follow-up work on the recommendations made by the Medical Inspector. In the past the number of corrections secured were so small that the money expended upon the inspection was wasted; but now, with the Red Cross, the Parent-Teacher Association and other organizations helping us, we expect a larger percentage of corrections not only for this year but for the future.

Another thing that should be noted is that correctional measures are not always within the reach of the people of the rural communities. The tonsils and adenoids that come out so quickly in Philadelphia, you are compelled to live with all your life in rural counties. We hope to establish motor health units, so that we may take diagnostic and correctional service into remote parts of the State. There are rooms that could be made available for clinical purposes if the motor unit went to them. Twenty-four hours or more could be allowed in each place for removal of tonsils, filling or extracting teeth, etc. With such facilities it is possible to reach any community, if we have adequate funds.

Child welfare does not consist in health service alone. We must go with the child in search of labor, and see that he is safeguarded; we must father and mother the dependent child; we must remove the defective and incorrigible child to a place of safety and, if possible, restoration for its own sake and for the sake of the community of which it is a part, and we must see that to all of them is assured the joy of life and equal opportunity within the limits of the capacity of each.

In co-operation with other divisions of the State Department of Health, with the Mothers' Assistance Fund, and with the Department of Labor and Industry together with all volunteer health agencies, we are expecting within the next two years to make a very definite impression on the infant and maternal mortality rates in Pennsylvania and on the general health conditions in every community of this Commonwealth, provided that the men and women of these communities, physicians and laymen, will stand back of the Department program.

The two things that we ask of you particularly are these: That in your local communities you will encourage the establishment of the child health centers and the maternity clinics, and the other is that you promote the employment of the public health nurse; for we believe that no one can so certainly help us to put across this idea as can the public health nurses, properly directed under medical supervision.

PRESIDENT'S ADDRESS.

BY

H. O. SKINNER, M.D., ST. PAUL, MINN.

(Delivered before the Minnesota Institute of Homœopathy, May, 1920.)

THE war is over, but it has left its imprint on us in the form of nervous unrest, an irritability, and a vague sense of dissatisfaction with things as they are, but without any conception of things better. Men are too ready to say, "I should worry," or "What's the use?" It is common to all walks of life and is seen in the man of medicine as well as in the man of labor.

We homœopaths are not immune, and just as we have attained a general recognition not heretofore conceived of, we are facing the danger of losing everything by our mere apathy.

"What is the use of continuing our separate existence?" is a query showing a state of mind that is dangerous alike to the cause of homœopathy and what Hahnemann was wont to term "suffering humanity." Is it not time that we take stock of what we are and what we stand for? And consider squarely why we should continue to maintain our separate existence?

What is homœopathy? Has it ever occurred to you that there has been formulated no adequate definition? When you are asked the question by a patient, do you not feel a little at a loss as to where to begin? Suppose you quote from Webster that it is "The theory and its practice that disease is cured by remedies which will produce on a healthy person effects similar to the symptoms of the complaint under which the patient suffers." There is no objection to this so far as it goes, but it is not adequate. It defines the particular feature of our school which has given it its name, but would it convey to the patient any fair idea of the practice of medicine as we, nay, as even Hahnemann himself conceived it? For just as "medicine is ~~that~~ science which relates to the prevention, cure or alleviation of disease," so by the same figure of speech is homœopathy more than a system of medicinal therapeutics.

The most simple and yet the most comprehensive definition of homœopathy is given by inference in that classical statement of the American Institute of Homœopathy that, "A homœopathic physician is one who adds to his knowledge of medicine a special knowledge of homœopathic therapeutics and who observes the law of similia. All that pertains to the great field of medical learning is his by tradition, by inheritance and by right."

In refutation of the charge of the other school that all there is of value in our practice we have stolen from them as well as that of some of our own school that we have in truth drifted away from the homœopathy of Hahnemann, I wish to show tonight how solidly this conception stands on the principles enunciated by Samuel Hahnemann in his *Organon of Medicine*. This work derives its name and style from that of Francis Bacon, and Hahnemann dared to believe that his *Organon* would be to medicine what Bacon's was to philosophy. How well he succeeded is attested by the numerous instances where the remedy, selected on homœopathic grounds

for a disease of unknown pathology was found to be the remedy on what our friends of the other school would call scientific grounds after the pathology became known.

It is to be remembered also that the last edition of the *Organon* appeared 87 years ago (1833) and that obviously Hahnemann's attitude toward the discoveries in new fields of research and the progress made in other branches of medicine than the administration of internal remedies must be inferred from his attitude to those of his own day.

The *Organon* is written as a series of aphorisms, beginning first as a statement of principles, and continuing as interpretation and application of them. It opens with a statement that the physician is to lay aside all pre-conceived ideas and theories and devote himself to the practical proposition of curing the sick, and he adds that the highest ideal of a cure is a "rapid, gentle, permanent removal or annihilation of the disease in the shortest, most reliable and most harmless way on easily comprehensible principles."

Then it names three essentials on the part of the physician: First, he must know what is to be cured in disease, that is, in each individual case of disease. In Hahnemann's time this was merely a summary of the things of which the patient complained. Today it implies a knowledge of prognosis which rests upon that of diagnosis, which in turn stands upon what we call pathology, a study of the nature of disease from cause through perverted function and tissue change to termination.

Secondly, he must know what is curative in medicine, that is, in each individual medicine. From the earliest times this was merely guess-work, and Hahnemann advanced the cause of medicine nearly a century by his demand that the action of drugs be determined by administering them to healthy human beings, human beings because they alone were able to explain their sensations. In our day we have learned by instruments of precision what effects other than sensory, medicine may produce and can, therefore, enlarge our field of experimentation to the lower animals.

Thirdly, he must know how to adopt the one to the other. That this must be done on the principle (or law, if you please) of *Similia Similibus Curentur*, he proves by faultless logic reinforced by countless references to reported cures and authenticated cases of drug action for which he must have combed the literature of all times and languages. Let me quote

from but one: "Could the cow-pox," asks Hahnemann, "protect us from smallpox otherwise than homœopathically?"

This method of selecting drugs is the neutral feature of our system of medicine and there are some who would limit all our activities to this one feature, but not so the founder of the school. The very paragraph I have been discussing ends as follows: "If, finally, he (the physician) knows the obstacles to recovery in each case and is aware how to remove them so that the restoration may be permanent, then he understands how to treat judiciously and rationally." Verily, this last is nearly all there is to the "scientific medicine" of today. The next article reads thus: "He is likewise a preserver of health if he knows the things that derange health and cause disease and how to remove them from persons in health." This proves our right to all that pertains to preventive medicine.

The *Organon* next takes up the question of causes of disease. It reads as follows: "It is not necessary to say that every intelligent physician would first remove the exciting or maintaining cause where this exists. He will remove from the room strong smelling flowers which have a tendency to cause syncope and hysterical sufferings; extract from the cornea the foreign body that excites inflammation of the eye; loosen the over-tight bandage on a wounded limb that threatens to cause mortification, and apply a more suitable one; lay bare and put a ligature on the wounded artery that produces fainting; endeavor to promote the expulsion by vomiting of belladonna berries, etc., that may have been swallowed; extract foreign bodies that may have gotten into the orifices of the body; crush the vesical calculus; open the imperforate anus of the new-born, etc."

Who dare charge that the homœopathist treats the results of diseases but ignores the cause of them? Who denies our right to surgical procedures or anything else that pertains to the great field of medical learning? If Hahnemann deemed it obviously right to crush the vesical calculus instead of trying to dissolve it, would he not sanction the surgical removal of the biliary calculus also, now that it can be done so easily and safely? And if he advocated emesis for the swallowing of poisons, would he not antidote or neutralize those that could not be so removed, even if the antidote were an antitoxin? And if he considered it not necessary to say that every intelli-

gent physician would remove the exciting or maintaining cause what would he say about the diseased tonsil and abscessed teeth which we now know to be the maintaining cause of so many and hitherto almost incurable alterations of health?

If some one asks why we devote so much attention to these adjuvant measures when Hahnemann devoted so much of his energy to medicinal therapeutics, I would reply in Yankee fashion by asking why Trinity Church of New York is now so small when once it was so large? The church has not changed; its surrounding buildings have merely given way to larger ones.

Homœopathic therapeutics are still as valuable as they ever were but this field of medical endeavor which in Hahnemann's time was the most important is now but one of many. Incidentally it is given to few men to excel in more than one line of work. Thus, Oliver Wendell Holmes would have been famous as a physician had he not been so great as an author, and Hahnemann's name would have shined in chemistry and a host of other fields if he had not been so great as a therapist. Modern medicines have been made by Hahnemann, Koch, Virchow, Lister, Pasteur, McDowell, Ehrlich. Each man was a master in his own field. Hahnemann's was therapeutics and he happened to come first.

And what is the mission of homœopathy? I believe it to be two-fold. First, it must live to resist the encroachments of surgery into the legitimate field of medicines. Not that I advocate the internal remedy in the place of surgery when an appendix has ruptured, but there are many conditions amenable to homœopathic treatment which without it would require the more dangerous, painful and crippling measure of surgery. More than this, is that list of what Dr. Wood, of Cleveland, has so many times discussed as borderliners. No one would think of homœopathic or any other medical therapeutics in the treatment of an ovarian cyst, and yet who knows how many ovarian irritations would have eventually become ovarian cysts had they not been cured in the functional stage before pathological changes had begun and so with cancers and goiters and calculi and what not.

Secondly, homœopathy must combat the steadily increasing therapeutic nihilism of the dominant school. They have discovered that their therapeutic measures, often valuable as

palliatives, are after all not curative, and so they are discarding them. The few that they still retain amuse us by their homœopathicity, but they cannot see it and homœopathy must continue until its principle is generally accepted or it will be lost for future generations to rediscover. In the meantime what will become of the sick?

Those who cannot be benefited by surgery are receiving practically no treatment at all. Some still stand for it. One lady whose little daughter was ill was urged by one of my patients to employ a homœopathic physician. She replied with an air of superiority, "My doctor does not believe in merely treating results; he believes in getting down to the causes of disease." Therefore, the treatment was nil and with what was the child ill? Influenza!

Many, however, are wearying of nothing more than a scientific diagnosis. They may as well have not even that and so they are going for their solace and moral support during their illness to the Christian Scientist and other drugless healers. This idea is very cleverly put by Carolyn Wells:

A MEMORY.

How well I remember our childhood's diseases,
As old recollections present them to view:
The fever and ague, the colds and the sneezes,
The mumps and the measles, and the chicken-pox, too.
The remedies mother administered quickly—
The syrup of squills, ipecac, calomel;
And then, if next morning we still appeared sickly,
She called in the doctor, who made us get well.

The old-fashioned doctor,
The family doctor,
The white-whiskered doctor
Who made us get well.

His eyebrows were bushy, his forehead was wrinkled,
His manner was hearty, his voice deep and gruff;
And through his big glasses his little eyes twinkled,
As he gave us a dose of some vile-tasting stuff.
He felt of our pulse, and he said, "Stick your tongue out!"
He told us to stay home from school for a spell;
Then "I'll see you tomorrow. Good morning," he flung out,
That old-fashioned doctor who made us get well.

The old-fashioned doctor,
The family doctor,
The white-whisked doctor
Who made us get well.

But now we have specialized diagnosticians,
Who take our blood pressure and temperature;
They're highly efficient, these modern physicians,
And yet they don't always accomplish a cure.
X-rays and vaccine they are awfully strong for;
They pull all our teeth, and we dare not rebel;
And they drag our case on 'till we secretly long for
The old-fashioned doctor who made us get well.

The old-fashioned doctor,
The family doctor,
The white-whisked doctor
Who made us get well.

We who have the advantage of homœopathic training need not worry ourselves, but what about the next generation? Do we not owe it to them to keep alive for their sake this homœopathic principle which not only has stood the tests of use and abuse, ostracism, ridicule, persecution and what not, but has withstood them for over a century?

And to those who think that homœopathic therapeutics are too small a part of medicine to bother with, I would draw a comparison with the automobile. One of the smallest parts of the machine is the valve core. The little rubber washer that goes around it is said to be the smallest essential part of the car. It weighs less than half a grain, but it keeps the air in. Now you can run a car without air in the tires, but what's the use?

INFECTIONS OF THE KIDNEY IN GYNECOLOGICAL PRACTICE.—W. C. Danforth (*Sur., Gyn. & Obst.*, 1920, XXX, 284) states that renal infections are four or five times as frequent in females as in males. He believes that insufficient emphasis has been placed on infections of the urinary tract occurring in infancy as a cause of kidney disease in later life. He suggests that specimens of urine should be taken during the first week of life, and thinks that if this were done it might lead to treatment that would prevent the further development of the disease, which might become serious. In his own private practice, it was surprising how frequently pus was found in the urine of very young infants. Lavage of the kidney is the method of treatment that the author prefers. He uses nitrate of silver, 1:300 to 1:100. The number of treatments required is from one to six, and it usually takes about three or four.

TUBERCULOSIS OF BONES.

BY

WESLEY J. BARRETT, M.D., CAMDEN, N. J.

(Read before the West Jersey Homœopathic Medical Society.)

IN choosing the subject I have announced, I am conscious of the fact that its atmosphere has been hazed by the disconsolate wails of countless mothers, who have painfully watched subtle disintegrating disease processes harass their loving offspring to final dissolution, and by heavy sighs of helpless physicians whose services could accomplish nothing more than ameliorate the pangs of irrepressible invasion, once the attack by tuberculous bone disease had become well established. But every dark cloud has a silver lining, and may it be our humble province to point out to some extent a way, or some ways by which the realization or consummation of the previously portrayed dark picture may be forestalled.

My subject, as assigned, was simply tuberculosis of bones. However, as I see it, tuberculosis of bones and tuberculosis of joints are all but inseparable, but so far as practical I shall endeavor to confine myself to tuberculosis of bones.

Surgical tuberculosis is usually a primary manifestation in children and if pulmonary tuberculosis appears, it is, as a rule, a secondary infection. Tuberculosis of bones then more often appears in childhood than in adult life. This is not a fixed law, like that of the Medes and Persians, but if tuberculosis of bones does obtain in later life, it is usually secondary to pulmonary tuberculosis.

In children the alimentary tract is the favorite route of infection whereas in adult life infection through respiratory tract holds preference. There are other less common means of entrance, viz., the tonsils and mucous membrane of the pharynx, the skin, the genito-urinary passages and the teeth.

One authority believes that tuberculous dactylitis sometimes owes its occurrence to infection of overlying skin wounds by tubercle, the bacilli being obtained by crawling upon the dirty floors.

One may assume that direct infection of a bone or joint from without is rare in its occurrence, and negligible as an etiological factor. There, therefore, remains the more in-

direct routes of the blood streams and lymph streams, the blood streams being the more heavily charged.

Relative to the comparative frequency of joint and bone tuberculosis, Fraser, of Edinburgh, states that during a period of ten years there were admitted to the wards of the Edinburgh Sick Children's Hospital 464 cases of tuberculous joint disease, while the number of tuberculous bone cases amounted to 353. Johnson, in his *Surgical Diagnosis* states that the large number of cases of joint disease are secondary to bone tuberculosis of the neighboring epiphyseal extremities.

Those who have had to do with tuberculous disease of bones or joints may have noted the regularity with which they have obtained the history of previous traumatism. There can be no doubt, but that in a certain number of cases traumatism does play an important part in the etiology. The trauma is not a severe one, it may be so slight as to have escaped the patient's notice. The explanation of the minor degree of the injury lies probably in this fact. An injury of some severity produces such a state of tissue reaction that the lodged organism is neutralized and destroyed. When trauma is slight no reactions follow, but instead a small effusion of blood and lymph, a condition of affairs which, by a temporary arrest of blood flow, favors a stagnation of the organism and the development of a definite pathological lesion.

There is another aspect to the influence which injury has upon the development of a tuberculous lesion. Not only may it favor its original deposit, but when it has developed it may very materially alter its further characteristics, and from this point of view the influence of traumatism is probably underrated. A form of disease which has hitherto remained defined and encapsulated may become, after the receipt of an injury, an actively spreading and infiltrating tubercle. And on a larger scale disease previously limited to the articular extremity of a bone, may be suddenly complicated by wholesale infection of the near lying point, or of the surrounding soft parts.

These relations of traumatism to the spread of the disease are of much greater importance in their practical bearing than any influence they may have upon the original development of the disease.

Among the predisposing causes are diseases which cause lowering of vitality, such as exanthemata, influenza, as well

as unhygienic surroundings. A transmitted weakened constitution also figures. Of the bones most frequently affected, the metatarsus, the tarsus and tibia hold high place.

Much might be said about the pathology of bone tuberculosis, but it seems fitting that we should confine ourselves simply to designation of types of the disease, viz.:

1. The encysted tuberculous lesion.
2. The infiltrating tuberculous lesion.
3. The atrophic tuberculous lesion.
4. The hypertrophic lesion.

The encysted tubercle is the most common and also the most chronic variety. The lesion varies in size from a pea to a walnut. From a microscopical standpoint these appear as translucent zones around which there is a band of pinkish white color, which gradually merges into surrounding marrow.

The infiltrating tuberculous lesion represents the acute form of the disease, as in the encysted disease there is a natural division into a series of zones. The centre is occupied by a pale yellow area yielding and crumbling when touched; it is the rarified bone framework, the interstices being filled with caseous debris. Caseation appears early in the disease area and spreads rapidly. Indeed, this type has a characteristic spreading and infiltrating tendency.

In the atrophic tuberculous lesion the distinctive feature is wasting and atrophy of the bony lamella.

The situation is typical in so far as it attacks the metaphyseal end of a long bone. The affected bone is uniformly and diffusely enlarged. It is much lighter than healthy bone and its surface yields to the application of a moderate degree of pressure with a curious crinkled sensation. The periosteum undergoes a moderate degree of activity, and a thin sheath of new periosteal bone is deposited. The change may extend to the articular cartilage, but the latter is never invaded.

The hypertrophic tuberculosis lesion is rare, its situation is typical in so far as it also attacks the metaphyseal end of a long bone. There is a diffuse thickening of the bone, beginning where the diaphyses joins the epiphyseal cartilage, and extending toward the centre of the shaft. The weight of the part is considerably increased. When the bone is divided in transverse section its structure is found to be unusually dense and firm. In the centre there is an area from which the lamella has been absorbed; their place being taken by a quantity of grey semi-diffuent material.

Embedded in the centre of the soft tissues, there is usually an elongated sequestrum. This type is believed by one author to be primarily a syphilitic infection, secondarily infected with tuberculous disease.

From the original focus within the interior of the bone a number of possibilities may result:

1. The disease may remain localized to the interior of the bones giving rise to no external evidence, beyond some periosteal thickening. Such a sequel is best exemplified in the encysted variety of the tubercle.

2. The disease may extend from the medulla to the periphery of the bone and form a subperiosteal cold abscess, or extending still further the disease force its way through the periosteum to become a cold abscess of the surrounding soft parts.

3. The whole extent of the shaft of the bone may become infected with tubercle, a diffuse tuberculous diaphysitis.

4. There may be an extension of the disease from the original metaphyseal focus, through the epiphyseal cartilage into the epiphysis, and from the epiphysis in the neighboring joint, setting up tuberculous arthritis.

It is necessary that one should insist on the paucity of symptoms in pure type of bone tuberculosis. That the symptoms shall be few is what should be expected from the pathological features of the disease. Local thickening of the bone is usually the first feature to appear. Its recognition will depend largely upon the location of the bone, whether superficial or deep. The increase in the circumference of the bone is due to periosteal reaction and deposit of subperiosteal bone. Its origin is insidious, but its progress is steady and may advance until the shaft of the bone has acquired twice its original circumference. At first the thickening is indentable because of its virtually granulation tissue, but as ossification becomes established it becomes as hard as healthy bone. The early position of the deposit is a fairly exact indication of the site of the original focus, but as the disease progresses the thickening may surround the entire circumference of the bone. It is slightly tender when palpated; and in the early stages of the disease there is no increased local temperature or redness. Local thickening, such as has been described, is the most characteristic feature of bone tuberculosis.

In bone disease, pain is the result of pressure upon nerve

endings. And in acute conditions the subperiosteal effusion is occasion for considerable pain. But in tuberculous bone disease pain is absent, especially because of slow infiltration, and the disease being confined to the interior of the bone. But in certain cases pain is certainly present, due to the fact that notwithstanding the disease is deep seated, there is a concomitant serous effusion beneath the periosteum, and the deep layers of the periosteum being well supplied with highly sensitive nerve endings, hence the pain. In the more rapid infiltrating types of tuberculosis osteomyelitis, it is quite possible that a considerable increase of intraosseous tension may occur, and as in acute osteomyelitis pain may be induced. The pain may not be local but referred, the best illustration of which is found in "Potts Disease," in which pain is often referred to the middle line in front.

Muscular wasting may be noted, but more probably due to non-use of part than result of disease, *per se*.

As the disease progresses caseation and abscess formation occur in the interior of the bone. When the periphery of the bone is invaded a subperiosteal cold abscess develops. Presently the periosteum gives away and the abscess formation extends into the surrounding soft parts. Its further course will vary according to questions of gravity, position and tissue arrangement.

Three factors are at work in producing the general features of osseous tubercle. They are the dissemination of the disease, the absorption of the tuberculous toxins, and the occurrence of sinuses with inevitable mixed infection. The dissemination of the disease is not common. Glands are the earliest tissues to become affected and a spread to the meninges is often the terminal feature. The absorption of tuberculous toxins, of course, continually proceeds in small measure or in great. It produces such features as loss of weight, increasing debility, disordered digestion, and occasional rise of temperature. But far more important than these is the part played by sinus formation and mixed infection. The infection of a cold abscess with organisms other than tubercle bacillus is often tantamount to signing of the patient's death warrant. When it has occurred, a cure is most difficult to obtain and quickly in the trail of the infection there come the complications of hectic fever, emaciation, sweating, diarrhoea and the features of waxy disease.

In the diagnosis of bone tuberculosis much stress may be laid upon family history and personal history, as well as hygienic surroundings, bearing in mind also that its occurrence is more likely in children, especially of the ages between five and twelve years. Since bovine infection is a likelihood the investigation of milk history is worth while.

In disease of the long bones, tubercle has a predilection for the metaphysis or epiphysis. Again some of the bones are more liable, especially the vertebrae and the short bones of the hands and feet. Of the physical signs which may appear thickening and abscess formation are the most important, thickening being an early sign, abscess formation late.

The occurrence of pain is unimportant, frequently being absent. X-Ray examination is of paramount importance. The tuberculin tests are worth while, viz., the ophthalmo-tuberculin reaction, the cutaneous tuberculin reaction (Von Pirquet). The focal reaction test consists in the injection into any part of the body a small dose of tuberculin (from 1 to 2 milligramme). If the lesion in question is a tuberculous one it becomes congested and hyperemic and there are constitutional signs, such as headache, malaise and rise of temperature. The use of this latter test is absolutely contra-indicated in conditions of fever.

In differentiating from syphilis, chronic staphylococcal osteo-myelitis, subperiosteal lipoma, periosteal sarcoma and central sarcoma, the X-ray is most valuable, the requisite being good plate and expert reader.

Prognosis in a given case of bone tuberculosis depends upon the general resistance that is offered to the bacillary dissemination and the quality for constructing a circumscribing fibrosis. The disease is in a tissue where meagerness of lymphatics precludes much absorption. Furthermore, the disease is surrounded by marrow possessing cells of considerable phagocytic powers. Since bone tuberculosis occurs more frequently in children and they are capable of strong resistance and recuperative power, the prognosis as to life is good. However, bone tuberculosis during the first two years of life is grave.

The position of the lesions, the multiplicity of the lesions, abscess formation and mixed infection are all determining factors. The skull bones and the spine are unfavorable positions. An extension of the disease to other parts indicates a want of general resistance, which forbodes ill in the ultimate prog-

nosis. Abscess formation makes way for mixed infection, which may be followed by invasion of vital organs, the meninges frequently suffering, the lungs rarely.

The treatment of tuberculous bone disease may be considered from several headings:

1. Preventive treatment.
2. General treatment.
3. Conservative treatment.
4. Treatment by tuberculin.
5. Operative treatment.

The preventive treatment resolves itself into a constant vigil relative to milk supply, non-association with consumptives and general hygienic conditions; milk supply with children because of supposed bovine source of infection in many cases of bone tuberculosis. Kissing of babies and children which is so commonly practiced should be tabooed. We might also say much relative to paucity of light and sunshine that is necessarily debarred by reason of unpractical construction of city houses.

For general treatment too much emphasis cannot be placed upon fresh uncontaminated air. To obtain this, especially among the poorer classes, where the necessity for securing it so often arises, is apt to tax one's contriving ingenuity. The development of a passing catarrh is of little moment compared with the benefit to be derived from constant breathing of fresh air. As the patient is likely to be confined to bed, placing the bed in an open space during the day and under an open window at night is a procedure possible in any home.

As to hospital treatment for these cases, it is practical to keep in hospital during active operative treatment. To keep in hospital until cure is complete is, even if possible, unwise. The close and long-continued association of such patients with other ward patients is, of course, a menace to others. Furthermore, these cases will do far better during the convalescent period in a sanatoria, or removal from comparatively close confines of the ordinary hospital. Climatic changes may be advisable. The diet of these patients should be carefully supervised. Fats and carbohydrates tend to counteract the tendency of wasting. If a marked febrile condition prevails there should be recourse to liquid and easily absorbable foods. The maintenance of digestion integrity should be sought, as stomach disturbance once obtained may beget such an abhorrence of food

as to permanently impair the appetite. Raw meats and eggs make good allies of fats and carbohydrates.

In drugs, the *materia medica* presents an armamentarium sufficient to put to flight his satanic majesty, but, like the hideous faces of the ancient Chinese warriors, they lack the punch. Cod liver oil, a time-honored remedy, seems to hold a traditional prestige, but personally, I have no use for it.

Arsenic, particularly in the form of the iodide, I have thought yielded benefit. Hypophosphite combinations are also useful. However, I believe that he who depends much on drugs leans on a poor stick.

Fixation of the local part has undoubtedly won many laurels. Not only fixation of the part, but also of neighboring joints. This is preferably done by plaster of Paris bandages, or by more intricate celluloid casing. By fixation, nutrition is improved and resistance to progress of disease is increased. The fixation should be kept up for at least twelve months, and it may be wise to add an additional six months.

Abscess formation is a frequent occurrence in bone disease. A cold abscess extends by an actual tuberculous change taking place at the periphery and gradually extending throughout the tissues. It is not a true extension of pus, but a gradual extension of tuberculous granulation tissue, and the conversion of the granulation tissue into pus. For the treatment of cold abscess, so-called, we may consider:

1. Conservative measures.
2. Simple aspiration.
3. Aspiration with injection of medicaments.
4. Simple incision without drainage.
5. Simple incision with drainage.

An untreated tubercular or cold abscess may be entirely absorbed or may be converted into an innocent collection of calcareous debris. For this reason there is so-called conservative treatment of tuberculous abscesses, or leaving severely alone. This purely expectant treatment must not be blindly adhered to in every instance. Tubby gives the following indications for the conservative treatment: (a) When the abscess is single and not tracking in two or more directions; (b) When the recumbent position is immediately followed by a cessation from pain and improvement in the general health; (c) The expectant plan should be persevered with if, after a short trial, the abscesses cease to enlarge; (d) A large col-

lection of pus is no hindrance to the treatment of this method, provided the appetite is good and the temperature normal.

Too often the tendency for tuberculous abscess is to increase in size. In such cases, simple aspiration under strict aseptic precautions may be tried, using an aspirator with a needle of large calibre provided with a stilet, so that if caseous material block the cannula it may be cleared with the stilet. Aspiration should not be through the most superficial part of the abscess, but through the healthy tissue and starting some distance from the abscess. Several successive aspirations may be necessary to effect a cure. It is wise to lessen the potential cavity of the abscess by pressure with a pad and bandage.

Aspiration followed by injection of medicaments may be of value. For this a special cannula, with an opening inside into which a syringe fits. Ten per cent. of iodoform in glycerin; thymol 1 pint; camphor 2 parts; solution of iodine and potass. iodide in water are some medicated injections that may be used. Simple incision without drainage implies the opening of an abscess, evacuating the contents and closing the wound to secure primary union. This is a method that is indicated in deeply situated diseases and is contraindicated in cases in which the skin has become stretched and undermined from the accumulation of subcutaneous pus. Primary healing is necessary to the success of the operation. The abscess cavity may be curetted and the debris washed away with a hot stream of boric acid solution or saline. But personally, we would be inclined to preserve the so-called pyophylactic or limiting membrane of the abscess and trust rather to swabbing of the abscess well with strong carbolic acid, followed by alcohol, or the application of strong tincture of iodine.

In a pure tuberculous abscess, drainage is never necessary; it may become so, however, when a mixed infection makes its appearance.

For the treatment of sinuses, the injection of Beck's paste, consisting of bismuth subnit, 1 part, vaseline 2 parts, is quite often effective, again using strict aseptic precautions. The contraindications to the use of bismuth paste as summarized by Ridlon and Blanchard are: (1) The presence of a sequestrum; (2) Coincident waxy changes in the internal organs; (3) When there are large distal pus sacs, which become filled after repeated injections with residuary bismuth; (4) In sinuses of tuberculous bone disease which have existed for less

than two or three months; (5) In old tubercular sinuses with extensive skin destruction and large areas of skin undermined. Bismuth poisoning should be guarded against.

As tuberculin treatment constitutes a thesis in itself I will pass it by.

Whilst conservative treatment should be given fair treatment in bone tuberculosis, yet it is obviously unwise to delay radical operative measures until there is much bone destruction, secondary infection and sinus formation. Many contingent factors have to be taken into consideration. As so many of these are children, the age standpoint is to be considered, and from this view one is disinclined to urge operation during the first two years of life. In a later period, in a case perhaps exactly similar from clinical aspect, one would recommend operative interference.

If, on the other hand, the family history is bad, there is a scanty tendency toward natural cure. In such a case, if the condition is at all amenable to operative treatment, then undoubtedly such treatment ought to be adopted.

There are certain bones which, from their position, do not permit of operation. There are other bones which, from the point of view of their locality, indicate operation. For example, in dealing with disease of toes and fingers, one would recommend conservative measures for fingers, operative measures for toes. If the disease lies in the immediate neighborhood of a joint, and has not invaded that joint, there is a very distinct advantage in removing the infected tissue before the joints become involved. As to multiplication of lesion, it is difficult to say whether this is an indication for operation or the reverse. If the affected bone is the original focus, and from it by dissemination there have appeared secondary foci, probably after removing the original source the secondary foci may resolve spontaneously. But if the bone focus in question, is itself secondary to an earlier infection, or if the dissemination which it has induced is well developed and advanced, operation is certainly inadvisable.

If, after six or nine months of conservative treatment, the disease is not improving, but is becoming more extensive and established, it is well to interfere and few mistakes are commoner than that of delaying too long. The second clinical feature to which importance must be attached is the question of cold abscess formation. It does not, of necessity, indicate

operation, but in doubtful cases its occurrence influences one in that direction. Lastly, cachexia and waxy disease are the signals that nature's resistance is at an end, and if life is to be saved, drastic measures require to be employed.

If X-ray appearance indicates a sequestrum of considerable size, this, of itself, warrants operation. Once operation is undertaken it should be thorough. I believe that error more often lies on the side of doing too little than too much. Freely exposing the bone and removing with gauze and sharp spoon the diseased focus is the proper procedure. In exposing the bone it is usual to choose a suitable intermuscular plane in order to avoid damaging the tissues. As it is likely that the wall of the opening will become infected with tuberculous material, it is well to disinfect the wall with pure carbolic acid, followed by alcohol.

The cavity that is left may be treated in various ways: (a) It may be stuffed with iodoform gauze, and the space encouraged to close partly by the formation of fibrous tissue and partly by development of new bone, the packing being continued until there is a complete obliteration. Another method is the use of Mosetig Moorhof's plug. All blood clot is removed from the cavity by packing with gauze wrung out of hydrogen peroxide. The cavity is dried with a hot air douche, and is then filled with a compound consisting of iodoform 60 parts, spermaceti 40 parts, oil of sesame 40 parts. The total ingredients are heated to a temperature of 100 degrees C. and after thorough mixing are allowed to cool to 60 degrees C. and poured carefully into the bone cavity, being careful not to allow the entrance of any air bubbles, filling the space as completely as possible. When the mass solidifies the soft parts are replaced.

In the treatment rigid asepsis must be maintained and it will be well to avoid frequent and unnecessary dressing.

While the wound is healing, it is necessary to immobilize, and when healed may be encased in plaster of paris, keeping in this, from three to six months. Prolonged fixation in after-treatment is very essential, even though it may appear that all trace of the disease had been removed.

EDITORIAL

THE DOCTOR GETS IT COMING AND GOING.

THE Doctor had been spending the evening making out checks for his numerous store bills, for it was shortly after the first of the month. As he noted the slowly but surely diminishing bank balance, he quietly turned to his better half who had been spending the evening with him in his den, and he observed: "My dear, you must be a little more careful about our accounts; the bills are very large this month, and we must reckon with the high cost of living." And the better half replied sweetly: "You know how I love you; and how anxious I am to please you; I promise to do better hereafter;" but she did not say in what way. The Doctor proceeded with his cheerful task, and the better half kept on reading.

Shortly there was a voice from the Better Half, as she handed over her magazine with the remark: "My dear, just read this." And the Doctor took the proffered periodical and read as follows:

"My dear," said Jones, as he and his wife were preparing to attend a reception, "you must cut down your charges for dress; I am anxious to have you look well, but really the bills are getting heavier than I can stand. You know that I expected that fine contract from Brown, the profits of which would have put us on easy street for many months to come, but today Brown told me that he had decided to place it elsewhere."

And shortly they attended the reception; and Brown and his wife were there also.

Towards the close of the function, Brown approached and said: "Here Jones, I want to talk with you a few minutes; come over here where we can be alone." And when they had retired, Brown reopened the conversation; "Jones, I wish to give you that contract." Jones with astonishment said: "Did you not tell me to-day that you intended to place it elsewhere?" "Yes," said Brown, "I intended to do so, but when I saw how well dressed your wife was, I said to myself, a man who can

afford to dress a woman like that must have a business, and to have the business, he must be able to deliver the goods. Come around and see me tomorrow and we will sign the papers."

"THAT will do very well for contractors," said the Doctor, "for contractors are on a very different basis financially from physicians. The public also looks upon them somewhat differently. Only this morning a new patient came in to me who had first thought of consulting Dr. Jones, but when he discovered Jones's munificent surroundings, he decided that a man who could maintain such an establishment would have to rob his patients in order to get the money to pay his bills.

"The doctor gets it coming and going. If he dresses well, he is a fop; if he does not, he is careless or even dirty. If he has a library, he is too theoretical; if he has not, he neglects study. If he comes promptly, he has nothing to do; if not, he is neglectful. If he is quiet, he is called unsociable; if he is not quiet, he talks too much. If the newspapers take notice of him, he gets credit for exploitation and fondness for seeing his name in print; if he does not get his name in the papers, he does nothing worth while. In other words, the qualities and characteristics which please one set of people are the self-same qualities for which he will be condemned by others. To paraphrase the poet:

"Rattle his bones over the stones,
He's only a doctor whom nobody owns."

THE USES AND LIMITATIONS OF GLANDULAR THERAPY IN PEDIATRIC PRACTICE.

THYROID preparations, notably the dried gland, when administered therapeutically produce the most striking results of any of the glandular products which are used in medicine. In the treatment of sporadic cretinism the effect is truly marvelous and by the proper administration of thyroid gland a physically stunted and mentally deficient infant will show immediate signs of improvement and eventually develop into a child of practically normal appearance even though perfect mentality may not be attained.

Unfortunately, however, thyroid gland is frequently ad-

ministered without proper indications and the indiscriminate use of this powerful agent is to be decried. Many backward children, and almost every case of the so-called Mongolian type of idiocy, because of its superficial resemblance to cretinism, have at some time or other been dosed with thyroid gland not only without benefit but with actual harm. Thyroid preparations are too potent to be carelessly prescribed and large doses are capable of exerting a decidedly harmful effect upon the heart and upon metabolism.

Small doses of thyroid gland (1/10 gr. of the desiccated gland, three times daily) are often beneficial in certain conditions in which there is evidently a slight degree of hypothyroidism and faulty metabolism. These children are undersized and undernourished, have an abnormally dry skin and suffer with chronic eczema.

The parathyroids are intimately associated with the genesis of tetany and a preparation of this gland would, therefore, appear to be useful in spasmophilia and other disturbances of calcium metabolism. Unfortunately the results from its administration have been so inconstant that they cannot be relied upon.

The thymus gland, owing to its supposed relation to growth, and because of a supposed thymus deficiency in rickets, has been used in rickets and in marasmus with doubtful effect. Thymus gland has also been used in chronic arthritis also with doubtful benefit. However, the association of an enlarged thymus gland with the status lymphaticus would appear to indicate that the thymus gland must in some way influence the function of the lymphatic glandular system. This is further substantiated by the fact that some of the symptoms occurring in Graves' disease, notably the lymphocytosis, are attributed to perverted function of the thymus gland.

Deficiency of the pituitary gland in childhood leads to the development of the Frohlich syndrome, or dystrophia adiposogenitalis. In this condition there is retardation of skeletal growth, sexual infantilism and adiposity. Theoretically the administration of pituitary gland should be of decided benefit in such cases but, unfortunately, the results are not brilliant. Desiccated pituitary gland, however, is frequently helpful in cases of mental and physical backwardness and should always be tried in such cases, especially if hypothyroidism can be excluded.

C. S. R.

THE HAHNEMANNIAN AND BUSINESS PROSPECTS.

It is needless to remind our readers of the situation as related to the printing and paper industries. A large proportion of the medical and lay magazines throughout the country have been forced thereby to increase their subscription prices. Thus far the HAHNEMANNIAN has enjoyed sufficient prosperity to maintain its old price that has prevailed from the time of publication of its first number. There have been three reasons helping toward this happy result. The first is the loyalty of our many friends, both old and new, thus giving the HAHNEMANNIAN the largest subscription list in its history; the second has been efficiency methods in administration; and the third, the unselfish interest displayed by all who have supported the editorial committee so enthusiastically.

The need for the continued existence of the HAHNEMANNIAN is attested by the number of societies that have made us its official organ for publication, and the large number of contributions now on hand awaiting publication. It is very important that we add to our pages at the earliest possible date. Our friends everywhere can help us materially by bringing their friends to us. This means increased circulation, and increased circulation means increased advertising patronage.

Let every reader do a "little bit of boosting!"

**SENECIO DISEASE, OR CIRRHOSIS OF THE LIVER, DUE TO
SENECIO POISONING.**

IN certain districts of South Africa the poor population subsists very largely on bread made from wheat which is contaminated with the seeds of *senecio illicifolius* *senecio burchelli*, which grow as weeds in the wheat fields. These *senecio* seeds are highly poisonous and have produced quite a number of cases of serious illness. Wilmot and Robertson have reported in the *Lancet*, October 23, 1920, a series of eleven cases the majority of whom subsequently died. The commencing symptoms are generally those of digestive derangement, resembling those of ordinary dyspepsia, with pains in the stomach, sometimes worse after meals. The onset may be either gradual or rapid. It is difficult to obtain an accurate history from persons of the poor white class, but our information goes to show that the period between onset and death may be from fourteen

days to two years or more. We also learned of a man who, after eating for two or three days bread containing senecio, was seized with violent attacks of abdominal pain which passed off without treatment. The first noticeable symptom is nausea, generally followed by vomiting, and attacks of acute pain in the stomach; these symptoms continue at intervals, becoming more frequent and severe as the disease progresses. Diarrhoea may or may not be present; blood is often vomited or may be passed in the stools; the liver soon becomes enlarged, and ascites rapidly develops in all severe cases; in no fatal case investigated was dropsy absent. The temperature is generally normal or subnormal; signs of collapse often come on quite early in the disease. Distension of abdomen is considerable and frequent "tapping" has been resorted to by medical men in attendance.

The post-mortem appearances in these cases were as follows: The liver, in what seemed to be a recent fatal case of this disease in the George District, was increased in size, edges rounded, and on the surface well-defined, slightly raised areas of a deeper color than normal were noted. On cutting into these portions they were found to be engorged with blood and to vary in size from that of a hazel nut to a walnut. Microscopic examination of sections showed the capillaries between the hepatic cells to be distended with blood, the central venule dilated, and the liver cells reduced in size, some containing pigment of a brown color and others fatty particles. The more advanced cases showed similar sized areas, but were of a lighter color than the liver substance, and on microscopic examination the usual round-celled infiltration and formation of new fibrous tissue—met with in cirrhosis of the liver from other causes—was the most marked change.

The stomach was, as a rule, normal in size. In two fatal cases of the disease reported by local medical practitioners the contents were stated to have been "dark brown coffee-ground material." In the specimens examined in the Government Laboratory numerous minute, dark-colored, circular spots were noticed on the inner surface, varying in size from that of a pin's head to that of a pea. The area of the stomach affected was always the larger curvature, beginning $1\frac{1}{2}$ inches from the pylorus and extending along the lower part of the larger curvature for 3 inches. On washing under the tap these dark-colored spots appeared as tiny ulcers, some very superficial, but

the majority extending through the mucous coat; the bases appeared covered with haemorrhage from small eroded vessels. With the exception of marked congestion of the kidneys the other organs examined were normal.

We have gone to considerable length in reporting the above account of senecio disease as investigation of literature shows that senecio aurens was at one time largely used for liver trouble, so-called, and for menstrual disorders. We have not been able to discover any provings of poisoning cases in literature that gave us as much information as does the report above quoted. Experiments made upon rats and guinea pigs confirm the observations upon humans.

* * * *

Since the above was written an additional article on the subject appeared in the *Lancet* for November 27, 1920, by Cashny and Watt. From this later article we derive a number of additional facts concerning senecio poisoning. It seems that this condition has been known for a number of years as the cause of a characteristic form of liver cirrhosis in cattle and horses in Canada, where it is known as Pictou disease, in South Africa (Molteno disease) and New Zealand (Winton disease). Chemical investigation of the senecio latifolius was made by one of the above writers under Professor Wyndham R. Dunstan's direction and "resulted in the isolation of two alkaloids, senecifoline and senecifolidine, which were examined by pharmacological experiment and were found to induce the same effects in animals as had previously been described by the veterinary investigators of the disease in cattle. Very large doses caused acute poisoning marked by excitement and convulsions from stimulation of the higher divisions of the central nervous system." To continue to quote from this interesting article: "But these were not of so much interest as the symptoms which followed from a single medium dose, or better from small doses repeatedly given by the mouth or subcutaneously. These corresponded closely with the disease arising from feeding the plant to laboratory animals or cattle, and also with the symptoms described by Drs. Willmott and Robertson." As above quoted: "The onset was slow, no effects following the injection of a single dose for several days; the animal then began to lose weight, diarrhoea and vomiting, general weakness, staggering gait and apathy followed, developing into stupor with low temperature and final

failure of the respiration. Blood was often vomited or passed in the stools and was almost invariably found in the stomach and bowel post-mortem. A certain amount of ascites was generally present in cats and sometimes this was very marked, the abdominal cavity containing large quantities of bile-stained fluid. Congestion of the stomach and duodenum with masses of black blood was present, whether the poison was given by the mouth or hypodermically. The liver was swollen and congested, and microscopically many of the liver cells were found in a state of degeneration, while the interstitial tissue was swollen and infiltrated with round cells which extended between the liver cells. The whole organ presented the appearance of early cirrhosis; the small laboratory animals did not live long enough to develop the later stages described in cattle, but there could be no doubt that the symptoms were of the same character. The gall-bladder and ducts were filled with dark, very viscous bile which could be pressed into the gut only with some difficulty.

BLOOD CONCENTRATION IN INFLUENZA.—Underhill and Ringer have presented a most interesting and convincing argument in favor of the contention that blood concentration is an important factor in the death rate of influenza. They make a comparison between it and acute phosgen poisoning, and present the following summary: "Pathologically, influenza and acute phosgen poisoning present strikingly similar effects on the respiratory tissue. In each, pulmonary edema is a prominent feature.

In acute phosgen poisoning, death is due to a marked change in the concentration of the blood. Extreme blood concentration is incompatible with life.

In influenza, the blood becomes greatly concentrated. This constitutes a factor of the greatest importance in the fatal outcome.

Pathologically and physiologically, then, influenza and acute phosgen poisoning bear striking resemblances.

A method of treatment evolved for acute phosgen poisoning has been applied with success in a few cases of influenza. The method consists in the maintenance, under carefully controlled conditions, of blood concentration as near the normal level as possible by venesection and fluid introduction.

Changes in blood concentration in influenza, followed by hemoglobin estimations, allow the grouping of cases into those demanding the prescribed treatment immediately, and those that either do not need this type of treatment at once or do not need it at all.

By following blood concentration changes, prognostication is greatly aided."—*The Journal of the American Medical Association*, December 4, 1920.

GLEANINGS

MEDICINE

Conducted by CLARENCE BARTLETT, M. D.

THE TREATMENT OF ERYSIPELAS WITH BRILLIANT GREEN.—Adams has had an extensive experience in the treatment of erysipelas as a result of which he expresses his belief that brilliant green is far more efficient than any local application hitherto recommended. His method has been to paint the affected area with a 5 per cent. aqueous solution once a day in mild cases and twice a day in severe ones. No dressing has been applied except a piece of lint on some parts of the body to prevent staining of the bedclothes. When the eruption has subsided the discoloration can be removed in three or four days by vigorous washing, preferably with ether soap. Possibly it would be wise to apply the solution over rather a wider area than that actually involved—for, say, an inch outside the advancing edge—but so far he has not done this.

The obvious objection to the use of brilliant green is that it stains whatever it comes in contact with, whether it be the skin of the patient, the hands of the nurse, or the bedclothes. It may, then, be urged that this is treatment by camouflage, and that we really substitute a green skin for a red one. The fact that the patients, both women and men, like it even when applied to the face, and that the nurses have quite withdrawn their original objections to it, go far to answer these arguments, and, according to Adams, as far as he is aware, brilliant green possesses no toxic properties. Both iodine and picric acid are open to objection on this ground.—*British Medical Journal*, Nov. 20, 1920.

PROTEIN FOOD AND BLOOD PRESSURE.—We have heard in the past many arguments in favor of dietetic measures as the only remedy for the reduction of blood pressure. The better clinicians have inclined to the view that such reduction was oftentimes brought about by starvation or by weakening the patient. Mosenthal's study of the subject is therefore of great interest, and the following are his conclusions: "Conclusions.—From these observations it would appear that it is exceptional for a low protein diet to diminish the blood-pressure or a high protein diet to raise it. Case 9, however, shows that this may occur. This patient was extremely ill, as the great impairment of renal function indicates, and was necessarily maintained in a state of undernutrition, since any attempts to increase the food resulted in uremic symptoms. However, even in this case a second period of low protein feeding failed to bring the blood-pressure to the low level previously obtained.

The diminution of the waste products in the blood, as indicated by a lowering of the blood urea nitrogen, was without effect upon the blood-pressure. Changes in the caloric value of the diet, for a short time at least, did not influence the blood-pressure.

Discussion.—The basis upon which the impression that a low protein

diet reduces the blood-pressure rests may possibly be found in the recent report of F. G. Benedict and his collaborators. These investigators demonstrated that by under-feeding the blood-pressure of healthy, young, male adults could be distinctly reduced. This change was accompanied by various other phenomena, among them a secondary anemia. These facts furnish a suggestion as to the therapeutic application of diet to hypertension. A subcaloric mixed diet may be continued for a considerable period, probably with beneficial effect. If the health and strength of the patient are to be maintained it is advisable to regulate the amount of the diet according to the hemoglobin content of the blood. The hemoglobin percentage should not fall below 85 per cent. From the data given in the present communication it is evident that in most instances a low protein diet continued for a period of a few weeks is without effect upon the blood-pressure of cases of hypertension."—*American Journal of the Medical Sciences*, December 1920.

THE MYTH OF ATYPICAL ENTERIC FEVER.—Garrow questions very seriously the propriety of the majority of diagnoses of atypical enteric fever, contending that if proper investigations are made that such cases will be diagnosed as examples of trench fever, malaria, dysentery and other infections. He contends that enteric fever is remarkably constant in its clinical manifestations and true to type. Although it may appear clinically in every degree of intensity from extreme mildness to overwhelming severity. He sustains his belief that atypical enteric fever is a myth by the contention that there has been a "lack of cooperation between workers in the wards and in the laboratory, and failure to coordinate their findings. When clinical and laboratory findings have conflicted the latter have prevailed, because laboratory investigation of disease has been generally regarded for some reason to be more 'scientific' than bedside observation. The truth, however, is gaining ground that science in medicine is not confined to the laboratory. The bedside has its victories no less than the bench. The flimsiest piece of evidence from the laboratory has often been accepted as proof of enteric infection in the face of bedside evidence which renders such a diagnosis untenable. The physician has thus allowed himself to be completely dominated in the matter of diagnosis by the pathologist. Diagnosis is the function of the physician; the pathologist's duty is to supply certain of the data for diagnosis."—*The Lancet*, October 30, 1920.

THE HEART IN PNEUMONIA.—Harlow Brooks and John Carroll present a study concerning the care of the heart in pneumonia at the conclusion of which they offer the following summary: "Conclusions.—1. The most frequent immediate cause of death in all types of pneumonia is cardiac failure. 2. In by far the larger number of instances this failure is due to right-heart deficiencies. 3. This occurs because of the very limited muscle reserve capacity of the right heart, plus a myocardial degeneration, the result of toxemia. 4. The preparatory and emergency use chiefly of the digitalis group of drugs fortifies the heart against these tendencies. 5. Rest, properly timed venesection, and numerous other adjuvant measures are frequently of great therapeutic utility."—*American Journal of the Medical Sciences*, December 1920.

DIABETES TREATED BY NOVARSENO BENZOL.—For a number of years there have appeared in the journals occasional reports of cases of diabetes,

successfully treated by the arsenobenzol treatment. Porter reports a case in a non-syphilitic patient in which the novarsenobenzol effected what appears to be a cure. The drug was administered in the usual dose, and repeated in smaller doses on two subsequent occasions. This subject is well worth further investigation.—*The Lancet*, November 20, 1920.

ESTIMATION OF THE BLOOD PLATELETS.—"Thomsen (*Acta med. Scandinav.* V, 1920) describes the following new method of counting the blood platelets. The blood is drawn by venipuncture and discharged into a specially graduated tube containing $\frac{1}{2}$ c. cm. of a 10 per cent solution of sodium citrate. The blood platelets are held in suspension unchanged for at least six hours, while the red and white corpuscles have sedimented after two to three hours. The number of blood platelets contained in the citrated plasma is then determined by a Thoma-Zeiss counting chamber for red corpuscles. Thomsen has found that the number of platelets varies in health from 206,700 to 413,400, as a rule being 250,000 to 300,000. In 10 cases of influenza and 5 of scarlet fever, the figures were high throughout (300,000 or over)."—*British Medical Journal*, October 23, 1920.

PEDIATRICS

Conducted by C. SIGMUND RAUE, M. D.

THE TREATMENT OF CONGENITAL SYPHILIS.—John A. Fordyce, M. D., and Isadore Rosen, M. D., New York, conclude a preliminary report of a method of treating congenital syphilis, as follows:

1. The earlier treatment is begun, the better are the chances of cure.
2. Systematic treatment with soluble mercury in oil and neo-arsphenamin given intramuscularly is so simple and the results are so gratifying that serologic cures may be anticipated within one year of interrupted treatment.
3. The Wassermann test taken at birth in the infant is not to be relied on. Ten days after birth is a better time for accurate interpretation of the serology.
4. A negative Wassermann test in the face of positive clinical manifestations may occur in congenital syphilis; therefore, careful clinical examination is very important, and antisyphilitic treatment may be instituted with negative serology.
5. We hope to publish later a more detailed description of the cases under prolonged treatment together with the serologic results obtained.—*Jour. of the Amer. Med. Asso.*, Nov. 20, 1920.

EPIDEMIC ACID INTOXICATION, OR PARKE'S SYNDROME.—B. K. Rachford, M. D., gives the following description of the clinical course of acid intoxication and expresses himself as opposed to the bicarbonate of soda treatment.

"This syndrome commonly begins with anorexia, nausea and vomiting. The vomiting and nausea do not, however, commonly persist for more than 1 or 2 days, and not infrequently disappear within 12 or 24 hours. During this time, however, nausea and vomiting may be persistent and severe. In many of these cases, after the second day the stomach begins to retain food

and medication, and continues to do so throughout the course of the disease. In a few cases, however, the vomiting may persist to the end.

Almost coincident with the nausea and vomiting, the acetone odor in the breath is noted, and the acetone bodies appear in the urine. The acetone and diacetic acid in the urine very rapidly increase in quantity, and in the fatal cases, towards the close of the disease, the urine becomes scanty and acetone and diacetic acid disappear.

The temperature in these cases is commonly above normal. Some cases record very high temperatures, reaching 105° and 106° . In other cases, even those which terminate fatally, the fever, which is present from the onset of the syndrome, disappears and the temperature may remain normal or subnormal to the end.

In the majority of cases there is, from the beginning, a rather marked intestinal fermentation manifesting itself in diarrhea. The discharges from the bowels are putrid in odor, and show other evidences of putrid fermentation. The urines in these cases show a marked excess of indican and indolacetic acid. The diarrhea, however, like the nausea, vomiting and fever, may vary greatly in different cases. In some instances there is constipation, but even in these cases the discharges from the bowels, produced by a laxative, as a rule, are putrid in character, and contain mucus, and the urine shows an excess of indican and indolacetic acid. It is my belief that the gastro-intestinal fermentation which is commonly, but not always present in these cases, is a symptom belonging to the syndrome and not the essential factor in producing the acidosis. A rather fair percentage of these cases occur in perfectly nourished, breast-fed infants under 1 year of age, and many of these breast-fed babies quickly succumb to this infection. If epidemic acid intoxication, it would be much more prevalent during the summer months, and would rarely occur in breast-fed infants.

Labored and rapid breathing is present in the majority of the cases, and is quite out of proportion to the elevation of temperature. This symptom is described by some writers as presenting the appearance of air hunger.

As the syndrome progresses, the child becomes more or less apathetic and lethargic; the stupor gradually increases, until the child fails to react to its surroundings and loses consciousness, dying in a profound coma.

There is nothing characteristic about the pulse in this condition. It is rapid from the beginning, and in the cases that progress to a fatal termination, the pulse may reach 150 or 200, and show intermittency.

In many of these cases there is a marked rigidity with tendency to retraction of the abdominal muscles, and not infrequently there is rather marked rigidity and tenderness in the right hypochondrium in the region of the liver. The liver, in many of these cases, is enlarged and extends 1 or 2 inches below the free margin of the ribs. In a few cases bile was found in the urine, and the conjunctivae and skin were slightly jaundiced.

Treatment.—"My experience, during the past winter, has convinced me that bicarbonate of soda in large doses is of no value. All of the fatal cases which I saw had been given bicarbonate of soda in large doses. In some of these cases the urine became alkaline under the bicarbonate of soda treatment, but the diacetic acid and acetone in the urine persisted.

After a rather wide experience in this syndrome, I not only became skeptical as to the value of bicarbonate of soda, but I gradually came to believe that in some of these cases it probably had a deleterious effect,

and I am still of the opinion that bicarbonate of soda in large doses, given intravenously and otherwise, may help to bring about a fatal result."

The writer believes that the best results are obtained from purgation, hypodermoclysis of normal salt solution, Bulgara tablets and a high carbohydrate diet.—*Archives of Pediatrics*, Nov. 1920.

INTRAPERITONEAL ADMINISTRATION OF SODIUM BICARBONATE SOLUTIONS.—J. W. Epstein, M. D. has found the intraperitoneal administration of sodium bicarbonate solutions of 2 per cent. strength harmless in animal experiments and draws the following conclusions from his experience with this method:

1.—The intraperitoneal route can be used for the administration of sodium bicarbonate.

2.—The results of the injections were the same whether the solutions of sodium bicarbonate were treated with CO₂ or not.

3.—A solution of sodium bicarbonate of a strength of 5 per cent. can be used, although it is probably advisable to use a 2 per cent. solution, which is isotonic with the blood.

Since the results of this work in the intraperitoneal injection of sodium bicarbonate solutions in rabbits have been made known to a number of the leading pediatricians of the city, the procedure has been applied to infants with gratifying success.

Unfortunately for the work of the author (though fortunately for the babies) the last summer was mild and a true case of acidosis a rarity. There was therefore no opportunity for the application of this method in the ward at Mt. Sinai. Other hospitals in the city, whose records are at my disposal, used this method of administering sodium bicarbonate as a routine one in their cases of acidosis, and in a series of cases treated at Lakeside Hospital, in the service of Dr. H. J. Gerstenberger, there was an unusually high percentage of recoveries, while autopsies on cases that did not recover failed to show any pathological effects of the procedure. The number of cases is, however, too small to permit of statistical deductions. At a somewhat later date, therefore, a more detailed report in regard to the clinical use and effectiveness of the method will be made from case records.—*Archives of Pediatrics*, Nov. 1920.

DERMATOLOGY

Conducted by RALPH BERNSTEIN, M. D., F. A. C. P.

FATAL ECZEMA AND SEASONAL HYPEREXCITABILITY OF THE VEGETATIVE NERVOUS SYSTEM.—Moro holds the view and acts accordingly in his practice, without being able to advance scientific reasons therefor, that eczema in infants should not be treated vigorously during the first months of the year, but that such external treatment should be reserved for the summer or fall months. He substantiates his view by reporting fifteen fatal cases, thirteen of the deaths occurring during the period from February 1 to March 31, the other two occurring during the remaining nine months of the year.—*Journ. Amer. Med. Assoc'n*.

SOME PECULIAR ASPECTS OF HERPES ZOSTER.—While herpes zoster does not as a rule recur, Stern claims that in certain rare cases it does recur

periodically, and such cases are often associated with facial paralysis and paralysis of other motor nerves, as the expression of a general infectious disease. He describes a typical case of the kind. In some cases the general symptoms, swelling of glands and paralysis of motor nerves, occur without the characteristic skin eruption of herpes zoster.—*Deutsche Medizinische Wochenschrift*.

PROTEIN SENSITIZATION IN ECZEMA.—Seventy-eight cases were tested with proteins by Ramirez, thirty-eight of which gave positive skin tests. Like asthma, anaphylactic eczema occurs more frequently under the age of 30. Eczema associated with asthma or hay-fever is usually anaphylactic. Only a small percentage of eczema cases are anaphylactic, but Ramirez claims it is important that patients be tested thoroughly in order that they may be classified properly and treated correctly.—*Journ. Amer. Med. Assoc'n*.

RECOGNITION AND TREATMENT OF MELANOSARCOMAS.—Axhausen reports three cases, with recovery, to show that melanosarcomas are often overlooked until they have reached an advanced stage, and he urges, therefore, that we should pay more attention to pigmented nevi when making general examinations. If a prominent pigmented tumor differs from ordinary pigmented nevi in hardness, in its smooth surface, and its tendency to a bluish black color, it should be extirpated.—*Journ. Amer. Med. Assoc'n*.

EXPERIMENTAL SYPHILITIC SKIN LESIONS.—A study of a large series of rabbits with outspoken manifestations of generalized syphilis showed that lesions of the skin and appendages constitute one of the largest and most varied groups of such affections. The conditions noted by Brown and Pearce consisted of alopecias, onychia and paronychia, and lesions of the skin proper. These lesions were divided into three classes: first, granulomatous lesions, second, infiltrations, and third, erythemas. The conditions described as cutaneous infiltrations included two general types of lesions, one a flattened and rather diffuse process, the other an elevated and sharply circumscribed papule. A third type of lesions resembling the macular erythemas of man was observed in a small number of the animals, and while no definite proof of the specific origin of these lesions was obtained, the evidence available was strongly suggestive. In addition, several other cutaneous affections were noted which have not as yet been thoroughly investigated. It is suggested, however, that these processes may bear some relation to infection with *spirochaeta pallida*.—*Journ. Amer. Med. Assoc'n*.

A CASE OF ERYSIPELAS WITH COMPLETE LOSS OF VISION.—Navtoji A. Cooper, of Bombay, India, reports the case of a patient with erysipelas in such severe form that it was complicated by loss of vision. The patient was a female, twenty-eight years old; was very poorly nourished and had had continuous fever for ten days with a large patch of erysipelas on the external surface of the right thigh. The heart sounds were feebly audible; pulse weak and of low volume, with slow and shallow breathing, with normal liver and spleen outline. There was total blindness of both eyes, one eye having been sightless from infancy, and the other affected only a few days after her present illness. The patient, who was delirious at times, was treated on ordinary lines with antistreptococcic (erysipelas) serum injections in large doses. In

all about eight injections were given, together with appropriate local treatment.

When the patient came under Dr. Cooper's care she was in extremely bad condition, highly anemic, prostrated, with the heart sounds feebly audible. She had a rapid, weak pulse combined with low muttering delirium. A further dose of twenty-five c.c. of antistreptococcic serum was given and the patient was put on a simple mixture of iron and given brandy in liberal doses as a stimulant. The temperature, which had been 99.6 degrees F., rose after three or four days, and at the same time there was a marked increase in tenderness in the hepatic region. Emetine injections of a quarter grain were given every day for three days. After the third injection the temperature dropped to normal. Pain and tenderness in the liver disappeared and the patient was a trifle better. Three more injections were given and the fever remained below normal. About eight days after the complete fall in temperature, large abscesses suddenly developed on the face of the patient, in both the arm pits and on the buttocks. Autogeneous vaccine was prepared and four injections were given. This prevented the development of further abscesses and inhibited the ripening of those already present. There were no other pyemic complications. About ten days after this the vision of the patient improved. A month after coming under Dr. Cooper's care the patient told him she could then see things as well as she could before her illness. During all the time she was under his care she was kept on a mixture of iron which was given in increasing doses. It was due to the iron that her vision was restored and her general health improved so quickly. Though the antistreptococcic serum, the autogeneous vaccine and emetine each played their own part against the infection and its pyemic complications, Dr. Cooper claims her recovery was due to the iron.—*New York Med. Journal.*

UROLOGY

Conducted by LEON T. ASHCRAFT, M. D.

THE IMPORTANCE OF FOCAL INFECTIONS IN THE URINARY DISEASES OF WOMEN.—“It has been recognized for a number of years that the genito-urinary tract is subject to acute and serious infections during or immediately after an acute attack of tonsillitis. Acute septic infarct of the kidney, acute pyelonephritis, and in the male acute prostatic abscesses are some of the conditions which seem to arise at times as a direct sequence of tonsillitis or some other distant focus of infection The typical patient is one who has suffered for weeks, months, or perhaps for many years with what has proven to be an incurable irritability of the bladder. If the complaint has been of years standing the patient has long since been consigned to the unhappy class of neurasthenics. The satisfaction of restoring such a patient to health with the ability to take his or her place in the competition of everyday life is one of the best compensations we can ask. Given, then, a certain number of patients suffering from bladder distress that has resisted the usual methods of treatment, and perhaps multiple operations, we should think at once of the possibility of the urinary tract lesions above described as commonly associated with a focal infection. With our modern urological methods we can usually rule out those cases of bladder distress due to tuberculosis, stone, or some pyogenic infection of the kidney and with comparative certainty the cases of chronic urethritis and trigonitis due to a past

gonorrhea. We then have left possibly a few cases for which we have as yet found no etiological classification, but by far the greatest number of the remaining cases belong to the group due to a focal infection. Our problem is (1) to determine whether a patient in this group is suffering from a lesion confined to the urethra or to the urethra and trigonum, or (2) whether the bladder is the seat of a wide-spread chronic inflammation, identified by the presence of one or more of the minute lesions which we have designated elusive ulcer, or (3) whether the patient's symptoms arise from a chronic inflammation of the ureteral walls. Having found one or all of these lesions in our 'neurosis of the bladder' patient, rational therapy includes the discovery and removal of any possible focus of infection. In these cases of urethritis, ureteritis, and trigonitis, we shall often find that all the usual measures of local therapy are of only temporary value until we have discovered and removed the focal cause."—Hunner in the *Urologic and Cutaneous Review*, Volume xxiv, Number 11.

TESTICLE TRANSPLANTATION.—The newspaper claims for Voronoff's anthropoid testicle transplantation are repudiated by him. Voronoff declares his work has nothing to do with reproduction. It is only on the hormone principle, and aims to find the means by which health and vigor can be increased and continued for a longer term of years. One experiment only has been performed on man and that so recently that the result cannot be announced. Experiments have been made on animals for three years, with a hundred successes and a great many failures. In a letter to G. Frank Lydston, admitting the latter's priority, Voronoff disclaims all experiments on man and limits his experiments to those on animals.—*Urologic and Cutaneous Review*.

THE WASSERMANN REACTION.—A negative Wassermann reaction is merely presumptive evidence of the absence of syphilis. It does not in any sense constitute proof. The blood may at times be negative, with the spinal fluid positive. A negative Wassermann may occur in the presence of tertiary skin or visceral lesions. After the Wassermann has become negative, intravenous treatments may be suspended (in the absence of visceral or neurosyphilis) and mercury be used to complete the cure.—Jay F. Schamberg, *Urologic and Cutaneous Review*, Vol. xxiv, No. 11.

PROSTATIC ABSCESS.—Livermore, in the *Urologic and Cutaneous Review*, Nov. 1920, cautions us never to attempt to rupture a prostatic abscess by massage per rectum. If the abscess points toward the urethra it may rupture into it, and although no immediate harm is done and relief is prompt, cicatricial contraction, with resultant stricture formation, may occur later. Should it point toward the rectum, it may rupture there and a disagreeable, painful condition, with a purulent discharge from the rectum may ensue. If it points toward the perineum it may rupture into it and a perineal abscess will develop, causing needless suffering and delay and necessitating operation later. If it points toward the peritoneal cavity and should rupture into it, peritonitis and death may result. Therefore he advises that when a diagnosis of abscess of the prostate is made, it should be opened and drained without delay, for then and then only can we control the exit of the pus.

SYPHILIS OF THE EPIDIDYMIS.—Though syphilis may attack any part of the human body there are certain regions that are relatively less often

affected than others. Among these relatively immune regions is the epididymis. The globus major is most often involved, the lesion appearing as a firm nodular mass, which forms a cap for the end of the testicle, the latter resting, as it were, in a clam shell. The French describe the epididymis appearing as a "helmet crest" for the testis. The absence of pain is a characteristic feature. The epididymis and the testis have several times been unnecessarily removed in syphilitic epididymitis because of wrong diagnosis, the condition having been mistaken either for tuberculosis or for neoplasm. The importance of a general diagnostic survey for the purpose of differentiating between the different forms of enlargement of the epididymis and testis is emphasized by Barker and Ward. Gummatous epididymitis clears up quickly under intensive antisiphilitic treatment. A case is reported by Barker and Ward.—*The Journal of the Amer. Med. Assoc.*

THE REACTIONS OF SYPHILIS IN WOMEN.—G. Gellhorn in the *American Journal of Syphilis*, 1920, iv, 480, emphasizes the fact that syphilitic manifestations differ considerably in the two sexes. Owing to the complexity of the female genitalia which offers more chance for concealment of the chancre, the initial lesion is extremely difficult to demonstrate. Even when recognizable it tends to be smaller and is less apt to be indurated, besides clearing up more rapidly than the male. Moreover in the female the secondaries are much more fleeting and owing to the absence of irritation from smoking, mouth lesions are uncommon. Fever and anemia, uncommon in the male, are relatively frequent in the female. Even though tabes and paresis are uncommon in women, the possibility of neurosyphilis in this sex must not be disregarded, for these symptoms may often be obscured by a superficial assumption of genital or climacteric ailments.—*Surgery, Gynecology and Obstetrics*, Vol. xxxi, No. 6.

OTOLOGY, RHINOLOGY AND LARYNGOLOGY

Conducted by JOSEPH V. F. CLAY, M. D., F. A. C. S.

CONSERVE HEARING AND ELIMINATE THE CAUSES OF DEAFNESS.—De Land, in dealing with this important subject, emphasizes the importance in the control of epidemics of scarlet fever and measles as these diseases are such important factors in the causation of cases of acquired deafness. He furthermore emphasizes the necessity of better co-operation of the laity with the health authorities in the stamping out of these diseases. The indifference of the lay population, especially in connection with measles, is responsible for the general outbreaks. The effect of syphilis upon the auditory apparatus must be reckoned with, not only in the cases of acquired lues, but also in the congenital cases.

Unwise marriage is given as the fourth principal cause of loss of hearing. In certain families there is an inherited tendency, sometimes latent in one generation, though usually potent to transmit that which results in loss of hearing. To quote from this article: "It is unwise for a deaf person to marry a deaf person, if either partner to the union has deaf relatives or if there is a history of family deafness in past generations. 2. It is unwise for a deaf person, whether born deaf or not, to marry even a hearing brother or sister

of a deaf person, if either party to the union has deaf relatives or if there is a family history of a diminished power of hearing."—*Volta, Review*, November 1920.

VINCENT'S ANGINA INFECTION.—Reckford and Baker, writing upon this subject, record their conclusions upon the critical study of fifty-six cases. These investigators believe that this condition is more prevalent than realized due, probably, to the lack of bacterial investigation and the confusion of the clinical picture with diphtheria and syphilis. Excessive ingestion of candy or proteins, together with lack of oral cleanliness, predispose to the infection. It seems definitely proven that the fusiform bacillus and the accompanying spirochete are one and the same, the latter being the evolutionary form of the former, but always present with the bacillus.

In the treatment of the condition they lay great importance to the care of the teeth and general care of the mouth. In the treatment of the actual lesion, the local application of arsphenamin in a ten per cent. solution in glycerine. The parts to be treated should be thoroughly cleansed and dried and then the arsphenamin solution applied with a small cotton swab and thoroughly rubbed into the lesions. Chromic acid in a 2% solution was also used. Other medicaments are mentioned, but the authors conclude that none has given such good results as the solution of arsphenamin.—*Journal of the American Medical Association*, December 1920.

SURGICAL TREATMENT OF CHRONIC MAXILLARY SINUSITIS OF ORAL ORIGIN.—Dunning believes that the percentage of antral infections of nasal origin and those of oral origin would be about 50-50; that many cases of low grade antral infections, of dental origin, remain undiscovered for long periods of time and uncovered by the removal of a tooth, the root of which had penetrated the antrum. Furthermore, many antra are opened through extraction and hence open to ascending infection from the oral cavity. When, by force of circumstances, the antrum is opened through the oral cavity, if it is diseased, this should be cured as quickly as possible and the opening between the antrum and the mouth should be closed at an early date. This author strongly emphasizes the dangers of ascending infection and his method is to separate the mouth and the antral opening by means of a "saddle plate" made of rubber covering the labial and palatal surfaces and held in position by means of clasps. This is worn until suppuration has subsided, when he closes the alveolar opening by means of a flap of mucosa which he elevates from the palate and tucks it under a labial flap. It will be seen that this method of dealing with antral suppurations, of dental origin, is directly opposed to the old Cowper's method.—*Journal of the American Medical Association*, November 1920.

POPULAR FALLACIES IN THE PRACTICE OF OTOTOLOGY.—Shambaugh points out that, with the increased knowledge of the etiology of diseases of the middle ear, the separation of otology, as an addendum of ophthalmology, was effected. Otology demanded a better understanding of rhinology. This has resulted in a swinging of the pendulum and the production of a most striking fallacy, the assumption that alterations in the nasal passages, such as irregularity of the septum and compensatory variations in the size of the turbinal bodies, cause middle ear disease. Only when unmistakable

obstruction to nasal respiration exists are we justified in including such nasal irregularities in the etiology of ear disease. Another fallacy emphasized by Shambaugh is the abuse of inflation in cases of obstructive middle ear deafness. In cases of primary fixation of the stapes and in most cases of chronic adhesive middle ear catarrh, inflation of the middle ear is not indicated and brings no results. There still exists the idea that local treatment will arrest the progress of deafness, whether this deafness be due to a degenerative eighth nerve lesion, a primary fixation of the stapes or a chronic adhesive middle ear process. The author in closing the article calls attention to the still existing and erroneous idea that a suppurating ear is nature's method of ridding the system of poisonous substance and that any attempt to correct this is attended by serious complications. Undoubtedly this incorrect view had its origin in the phenomenon observed in cases where intracranial complications occurred with the cessation of the aural discharge.—*Laryngoscope*, November 1920.

THE ETHMOIDAL PROBLEM.—Skillern, in writing upon this perplexing rhinological problem, goes into considerable detail in the careful study of the individual case and urges that operative procedures upon the ethmoid unless slowly, carefully and systematically carried out, are apt to spell disappointment. He further states that radical operations upon this structure do not by any means always end in radical cures.—*Laryngoscope*, November 1920.

REPORT OF A CASE OF PRIMARY CARCINOMA OF THE MIDDLE EAR.—Guttman reports a case of carcinoma of the middle ear in a man of 60 years. The case suffered an acute otitis media five years previous to Guttman's examination. Six months ago return of purulent secretion, associated with dizziness and followed by facial paralysis. There was a swelling in the zygomatic region. There was deafness in the affected ear. The labyrinth did not react on the left side (side of the lesion) and the reaction on the right side was sluggish. Operation revealed a large amount of pus and granulations in the zygomatic region. The mastoid antrum contained masses of the neoplasm which under microscopic investigation proved to be a squamous cell carcinoma. The patient died six weeks after operation under the symptoms of purulent meningitis.—*Laryngoscope*, November 1920.

OPHTHALMOLOGY

Conducted by W. M. HILLEGAS, M. D.

EXCISION OF THE LACRIMAL SAC.—When excising the lacrimal sac, Posey employs Meller's operation. A 2 per cent solution of novocain is substituted for cocain. The author emphasizes the necessity of severing the sac, first below and dissecting upward toward the more vascular apex to minimize the hemorrhage. After the sac is thoroughly excised the edges of the wound are carefully coaptated with interrupted sutures. The sutures are removed on the third day.

Posey advises the removal of the sac in all cases where there is a mucopurulent discharge from the sac, and in all mucocèles where pressure fails to evacuate the contents either into the nose or the conjunctival culdesac;

also of all infected sacs before operations necessitating incision into the globe and in neoplasms of the sac.—*Amer. Jour. of Ophthal.*, Vol. 3, p. 206.

METHYL ALCOHOL AMBLYOPIA.—In an editorial, Jackson takes occasion to call attention to the destructive effect of methyl alcohol. While the dangers from this poison are pretty well known by the ophthalmologist, they still need to be urged upon other branches of the medical profession and the public, until some of the measures for the prevention of such blindness suggested sixteen years ago by Wood and Buller, are more generally put into effect.

In these times of the use of illegitimate liquor, the warning is timely. Particular attention is called to the fact that poisoning may occur through inhalation and topical application as well as ingestion. The chronicity and obscurity of the symptoms in certain of these cases is baffling. Few cases come under treatment soon enough to give good results. The tendency for one who has been on a debauch, is to conceal his folly, therefore the delay. More important than the deaths, are the cases of blindness caused to patients; they are a burden on the community, being life long dependents. Success in treatment depends upon the case being seen early, and immediate eliminative measures being instituted.—*Amer. Jour. of Ophthal.*, Vol. 3, p. 150.

BASAL METABOLISM IN EXOPHTHALMIC GOITRE.—The basal metabolism in exophthalmic goitre has been studied in a large series of cases by Meani and Aub, who believe its periodic determination should be as much a routine in the management of exophthalmic goitre as the examination of urine for sugar in diabetes mellitus. They conclude that after two or three years the results of X-ray treatment are as good as those of surgery, in the majority of cases. Surgery produces a rapid fall of metabolism, followed by a secondary rise, and then a final fall. X-ray treatment causes a gradual progressive fall, and requires a lesser rest factor. Patients treated surgically do better if previously submitted to the X-ray. Surgery should be held in reserve for patients who do not do well under irradiation of thyroid and thymus glands; and it is contraindicated in cases where metabolism: rises in spite of complete rest in bed.—*Ophthal. Liter.*, September 1920.

BASAL FRACTURES.—Brose calls attention to the importance of eye and ear symptoms for the proper interpretation of injuries at the base of the brain. The eye symptoms as a rule are not the result of fracture displacement, or the trauma directly, but arise through brain compression from hemorrhage, brain edema and inflammatory exudate. In other words, from indirect rather than direct injury. Papilledema is, therefore, an early and valuable diagnostic sign in many basal injuries.

During the late war many cases of hemianopsia were encountered, the result of injury to the cortical visual centers on the opposite side of the brain. Chiasmal injuries are prone to occur with fracture involving the middle fossa, while occipital injuries are more likely to produce lesions in the cortical centers. In wounds involving the occipital bone papilledema occurs more frequently than in the cranial injuries. The motor nerves of the eyes may be involved singly, collectively or in pairs. The sixth nerve is probably oftener involved than the other eye nerves. The third and facial nerves are not infrequently injured by forceps during difficult instrumental delivery.—*Ophthal. Liter.*, September 1920.

INFLUENCE OF THE GENITAL ORGANS UPON THE VISUAL APPARATUS.—*Revista, Cubana de Oft.*, 1920. The professors of Valencia University (Spain) have made very complete studies of the relationship of the eyes and the genital organs, especially in the female. The influence exerted on the eyes by some functional disturbances of the genital organs, is chiefly of a functional nature, and although there must be some somatic disturbances, they are not easily proved, at least at the beginning of the ocular complications. Many times the organic disturbance is present in the nervous centers and the disturbances reflected to the eyes are only of a functional nature. But those functional anomalies may in the long run give rise to somatic alterations.

Among the ocular conditions studied from this standpoint, the *asthenopia of accommodation* is very prominent, in many cases of which the ovarian extractions have given good results. The existence of vaginal discharge and other symptoms related to it, are points of great importance in many of these cases.

There are many cases of insufficiency of the internal recti muscles (muscular asthenopia), chiefly seen in myopes, that occurred in nonmyopic subjects but in which pregnancy had a very etiologic influence, as they were cured as soon as labor was completed. This opinion is more reinforced, according to the author, by the amelioration of the cases of retinitis of pregnancy, after the death of the fetus; and before any symptoms arise of the pregnancy being ended, this points to some toxemia, and not to the mechanical compression.

Nervous asthenopia, or retinal asthenopia, so often confused with the form seen in accommodation, was very frequently seen by the author in women with chronic inflammation of the peri-uterine cellular tissue, and irregular menses. There are many more different functional ocular disturbances, as spasma of the orbicular muscle, amblyopias, hemeralopia, and different neuralgias that undoubtedly correspond to some circulatory disturbances of genital origin, as do also some cases of scintillating scotomata.

BENZYL BENZOATE IN WHOOPING COUGH.—David I. Macht made a study of 115 cases of whooping-cough, the majority being children ranging in ages from a few weeks to fourteen years. All other medication was discontinued and the patients were given a 20 per cent solution of benzylbenzoate by mouth. The dosage varied from 5 to 40 drops in water, three or four times a day. At times it was flavored with a few drops of benzaldehyde and the medicine was administered in sugar water or milk. About 90 per cent of all the patients showed more or less beneficial effects; about 50 per cent in the symptoms. The therapeutic effects of benzylbenzoate were not of a curative character, but were of a distinctly palliative nature. The findings are summarized in the following conclusions: 1. The administration of benzylbenzoate solution alone, and still better, in combination with small doses of benzaldehyde, exert as beneficial palliative effect on the violence and number of whooping-cough paroxysms. 2. The mode of action of the drug in such cases has been investigated experimentally (discussed by the writer in the text). 3. In view of the low toxicity of benzylbenzoate and benzaldehyde, and the considerable number of successful therapeutic results obtained with them, their further trial in the symptomatic treatment of paroxysmal cough and especially of whooping-cough is deemed advisable.—*Bulletin of Johns Hopkins Hospital*, July 1920.

THE HAHNEMANNIAN MONTHLY.

FEBRUARY, 1921

Minutes of the Fifty-Seventh Annual Meeting of the Homoeopathic Medical Society of the State of Pennsylvania

Held at the Penn-Harris Hotel, Harrisburg, Pa., Sept. 21, 22 and 23

TUESDAY, SEPTEMBER 21ST.

MORNING SESSION.

The meeting was called to order by the President, Dr. Robert L. Piper, of Tyrone, at 9.30 A. M. An invocation was delivered by the Rev. George E. Hawes, D.D., Pastor of the Market Street Presbyterian Church, of Harrisburg. Addresses of Welcome were made by the Hon. George A. Hoverter, Mayor of Harrisburg, and Mr. C. A. Beckley, representing the Chamber of Commerce. Dr. George B. Moreland, of Pittsburgh responded on behalf of the Society.

The Report of the Treasurer, Dr. Ella D. Goff, was presented *in absentia* by Mr. Sion B. Smith. It showed a cash balance of \$4,043.83.

The Report of the Trustees was called for but was postponed.

The Necrologist, Dr. Howard F. Schultz, of Philadelphia, reported the deaths of the following members: Wm. Adams Seibert, Easton, Pa.; John L. Metzger, Jr., Philadelphia, Pa.; Wm. Franklin Kistler, Minersville, Pa.; Mary Johnson Cochran, Chester, Pa.; John Frank Peterman, Lebanon, Pa.; Samuel C. Moyer, Lansdale, Pa.; Edward Cranch, Erie, Pa.; Hannah C. Reinhold, Williamsport, Pa.; Harry G. Weist, Schuylkill Haven, Pa. On motion, the Report of the Necrologist was accepted.

The Report of the Committee on Legislation was presented by the Chairman, Dr. Edward A. Krusen, of Norristown, and was as follows:

Mr. President and Fellow Members: We have had considerable to engage our attention during the past year. Several meetings of the Medical Legislative Conference have been held and a course outlined of constructive rather than of obstructive work to get our Legislative Committee in line to meet some of the conditions and the questions we know will come up for our consideration. Some of these latter, no doubt, will be vicious, and detrimental to the medical profession, if not taken care of. There have also been a number of meetings of the local societies attended by members of the Medical Conference, at which legislative matters were discussed by one or more members of the Conference. A few weeks ago there was a get-together meeting at Willow Grove, at which there were about two hundred physicians, representing eight of the counties of Eastern Pennsylvania; and there the legislative matters were pretty freely discussed.

In the early part of this year, we sent out circular letters to ten thousand doctors of Pennsylvania, asking for a contribution for the work of this Legislative Committee. Of those ten thousand, less than two thousand were heard from. Up to this time, I have received \$1918.00 for the benefit of legislative work. The letters that were sent out will, in a few days, be supplemented by a letter to the secretary of each of the local societies in the three medical districts in the State. Some of the physicians have responded splendidly. Others, we have not heard from; but many of these we expect to hear from through their local societies. The Medical Society of West Philadelphia—the West Philadelphia Medical Association, I think they call it—contributed three dollars apiece from its members. The Philadelphia Medical Society sent a check for two hundred dollars. The liveliest group of men, however, is in the Central Homœopathic Medical Society of Pennsylvania, who have sent the best contributions. I have had contributions from most of them, and they have sent five dollars apiece. Their Secretary, Dr. Read, of York, says that he will get all the rest of them to contribute. All over the State, where we have heard from any of our men, we have met with the greatest encouragement. They are all alive now and more alive than they have ever been before to the necessity of keep-

ing a Legislative Committee right on the firing line. Moreover, our friends in the Old School this year have elected Dr. Van Sickle who was the President of our Conference last year, as their Permanent Executive Secretary. He has his office here in Harrisburg; and it will, no doubt, become a permanent affair. He will be glad to receive any members of this Society there. You will hear more from Dr. Van Sickle at the meeting tonight.

There are some things that we do not care to speak of yet; but one of the most important bills that there will be to consider is the Compulsory Health Insurance Bill. The Commission that has been appointed by the Governor of this State has kindly invited the Medical Conference to meet with it in any or all of its sessions to discuss this question. Its members have been very courteous to us. No bill has been formulated yet to present to our Legislature, but there will be something. They have had it in other countries, and it is said we have had it in other States. The issue will come up. We must meet this issue; and then we must have something better to offer, so that the Commission can present it to the people of Pennsylvania. It is up to the medical profession to take care of this question, and to present some means of supplying the needs of the people that will be better than the compulsory health insurance. You will hear more of this.

There is a letter that has been circulating among the members of the Legislature and all the candidates for the Legislature, sent out by the Pennsylvania Anti-Vivisection Society. The passage of this bill will produce a condition that is absolutely impossible to tolerate. It must be defeated.

There is another proposition, made by Dr. Colcord, of Pittsburgh, in reference to the Workmen's Compensation Act. While that is only a minor question, and does not amount to a great deal that interests the general profession, I can assure you that the Medical Legislative Conference is trying its best to safeguard the interests of the profession and the people; and we all crave your co-operation.

The Report of the Trustees was presented by Dr. G. Morris Golden, Secretary of the Board, as follows: Four special meetings of the Board of Trustees have been held, September 17th, October 29th and December 17th, 1919, and the Annual Meeting, September 21, 1920, at Harrisburg, Pa. The usual routine business has been transacted and the bills pre-

sented to date ordered paid. Other subjects of minor importance received attention and discussion. If you will remember, last year the question came up as regards the transfer of the HAHNEMANNIAN MONTHLY to the State Society. This transfer has been made, and it is now the official organ of the Society; and the Officers and Board of Trustees of the State Society constitute the Officers and Directors of the HAHNEMANNIAN MONTHLY. Up to the present time, there has never been any date set for the fiscal year of the HAHNEMANNIAN MONTHLY or the State Society. By direction of the Board of Trustees, the fiscal year of the Society will date from November 1st of one year to October 31st of the succeeding year.

One of the most important things taken up by the Board of Trustees was the subject of Federation. You will remember that last year our report was practically a negative one. We decided to wait until we have more definite plans and understand the objects of Federation and the benefits to be derived from such a Federation. This has been, even up to the present point, in a very indefinite state. I want to emphasize the fact that the Board of Trustees is heartily in accord with the idea of Federation. Sometimes you have a notion that we are not in sympathy with the idea, which is not the case. but under the present plan we cannot see whereby we can benefit from co-operation. In these circumstances, your Board of Trustees, at the meeting last night, appointed a committee of three to draw up some definite plan of organization showing its objects and the benefits to be derived from the same. This committee will report, and you will hear, no doubt, from them later on during the session.

Our meeting here at Harrisburg was arranged at the invitation of the Central Society of Pennsylvania, whose guests we are; and this meeting is held under their auspices.

Dr. Clarence Bartlett, of Philadelphia, rose to speak on the subject of Federation as follows: The Federation includes only the American Institute of Homœopathy and the subsidiary State Societies, of which there are only thirty-two. We insisted that the Federation must be complete and make a solid, harmonious whole, without which Federation is a farce. The thing is to get together and devise some plan by which the county societies, of which we have only fifty-five in the United States, may constitute the unit. Of these county societies, over half are in New York and Pennsylvania, and

three-fourths in New York, Pennsylvania, Ohio and New Jersey. Any physician who limits himself to the American Institute of Homœopathy neglects an important part of our organization without which we cannot live, and without which we must go to the dogs.

Dr. W. F. Edmundson, Pittsburgh: We had a meeting of our County Society last Wednesday night, at which this matter was discussed; and our understanding of the affair was that we, one of the largest State Societies in the country, were not represented in the American Institute.

Dr. Bartlett: A few days ago, the September number of the *Journal of the American Institute of Homœopathy* came out. It contained an article on this subject. I cannot remember all the statistics; but I think that all the States had contributed just four hundred and eighty-nine dollars to that wonderful fund, which has been talked of so much. We ourselves shall have to contribute seven hundred dollars; in other words, nearly double what all the other States have contributed. The matter requires a great deal of thought; and Dr. Wells, Dr. Moreland and I will have the matter in hand for the Board of Trustees. We purpose to see Dr. Sawyer during the present meeting, and learn something definite so that we may try to get an organization that will include everything, from the county society up.

Dr. Bernstein reported for the Committee on Publicity, He spoke of the very great difficulties attendant upon his work due to the failure of members to present abstracts of their papers to help him with the work.

The Membership Committee reported the following candidates who were duly elected:

Francis L. Abbott, Phila.	C. C. Bradin, Tyrone.
M. L. Adams, North East.	Lincoln S. Brown, Pittsburgh.
John V. Allen, Phila.	V. M. Cintra, New York City.
A. L. Baker, Catasauqua.	Leon Clemmer, Elkins Park.
Frank Baum, New York City.	Saml. W. Clover, Phila.
Frank B. Bauman, Phila.	Selden S. Cowell, Hunsdale.
T. L. Blair, Waynesburg.	Wm. Cowley, Pittsburgh.
Edgar M. Blew, Allentown.	Wm. D. Danner, Glenville.
Oscar E. Boericke, Phila.	E. Rice Davis, Renovo.
John D. Boileau, Phila.	Chas. F. De Feo, Phila.
C. L. Boyd, Pittsburgh.	Jos. A. Di Medio, Chester.

- John A. Doyle, Phila.
 T. Snively Dunning, Wayne.
 T. P. Edmundson, Pittsburgh.
 Wm. F. Ely, Lansford.
 Russell M. Evans, Pittsburgh.
 R. K. Fleming, Pittsburgh.
 A. H. Friedman, Phila.
 Geo. W. Gardiner, Phila.
 Edwin Sartain Gault, Phila.
 J. W. Gebhardt, Pittsburgh.
 A. W. Gernert, Myerstown.
 Harry S. Gingrick, Lickdale.
 R. F. Goeringer, Scranton.
 Wm. H. Guillian, Phila.
 Chas. T. Haines, Vinemont.
 S. K. Hall, Sharpsburg.
 E. A. Hambright, Phila.
 C. W. Hancox, Pittsburgh.
 A. L. Hauer, Lebanon.
 Royal A. Henry, Allentown.
 (Formerly Koronski)
 A. C. Heritage, Jenkintown.
 H. P. Hess, Pine Grove.
 J. E. De Hoff, York.
 E. H. Hoke, Meyersdale.
 J. W. Hutchings, Clifton Heights.
 Stephen E. Hutnick, Phila.
 Robt. M. Johnston, New Kensington.
 Robt. B. Kistler, Minersville.
 J. V. Klock, Mahanoy City.
 Amos D. Krewson, Phila.
 A. H. Laros, Northampton.
 Walter E. Lee, Darby.
 Chas. F. Leonard, Phila.
 J. C. Lingle, Middletown.
 H. B. Marks, Phila.
 Fred H. Martz, Hollidaysburg.
 Thos. Matlack, Phila.
 Wm. K. Mathewson, Pittsburgh.
 J. E. Moore, Carnegie.
 Albert Mutch, Phila.
 Alice V. MacKenzie, Phila.
 J. P. McComb, Pittsburgh.
 R. Proctor McGee, Pittsburgh.
 Chas. A. McNeill, Erie.
 Robt. J. McNeill, Phila.
 R. E. Peterson, Swissvale.
 Edwin H. Pflueger, Phila.
 Lydia B. Pierce, Allentown.
 Jos. F. Piotrowski, Pittsburgh.
 Thos. H. Powick, Easton.
 F. M. Quinn, Minersville.
 Ida Virginia Reel, Phila.
 W. H. Rennie, Phila.
 Henry J. Reuter, Jeannette.
 J. S. Rittenhouse, Reading.
 L. B. Roberts, Quakertown.
 C. H. Robinsteen, Pittsburgh.
 C. M. Roudabush, Altoona.
 F. M. Rumsey, Conneautville.
 Anna L. B. Ryder, Chambersburg.
 H. H. Sanderson, Johnstown.
 G. C. Schwartz, Lancaster.
 Wm. H. Schwartz, Phila.
 W. H. Shane, Phila.
 R. L. Sheets, Beaver Falls.
 W. B. Shepard, Pittsburgh.
 A. L. Sierer, Harrisburg.
 C. W. Simmons, Phila.
 Jas. R. Skeoch, Dunmore.
 Jas. G. Spackman, Wilmington, Del.
 Henry L. Stem, Union City.
 John J. Sweeney, Doylestown.
 Jos. A. Thompson, Phila.
 J. B. Thompson, Boston, Mass.
 Ed. F. Truter, Pittsburgh.

Cyrus W. Truxal, Wayne.	Victor D. Washburn, Wil-
Urania Tyrrel, Phila.	mington, Del.
Charles Wagner, Hanover.	Raymond A. Wertz, Renovo.
Wm. J. Walker, Jr., Phila.	Albert F. Woll, Phila.
Harry Walmer, Millersburg.	E. P. Woolard, Phila.
Ralph S. Walter, Harrisburg.	C. W. Young, Phila.

A few months ago there were in the American Institute one hundred physicians of Pennsylvania who were not members of the State Society. That number has since been reduced to seventy. Of these, some are so unethical that they could not pass our Board of Censors. Ten more had been dropped from our Society for non-payment of dues. Membership in the organization should begin with the County Society. Before coming into the State Society, a man should be a member in good standing in the County Society; and before belonging to the American Institute, he should be a member in good standing in his State Society. Then we would have a solid membership, right through. Unless we have that, we shall admit men of unethical standing.

At the meeting of the Seniors of the Institute, there were several men held up before the committee for unethical conduct; and all were whitewashed, because of lack of conclusive evidence due to insufficient knowledge from a local society, which is the unit of organization, after all.

Dr. J. M. Kenworthy, of Philadelphia, reported for the Committee on Registration and Statistics.

The Entertainment Committee reported through Dr. Charles M. Rhodes, of Harrisburg, Chairman. He announced a banquet and smoker for the members and several entertainments for the visiting ladies.

The Committee on Exhibits reported through its chairman, Dr. Ralph E. Pilgram, of Harrisburg. Dr. Pilgram enjoined upon members the importance to them of seeking such information as was obtainable by visiting the exhibits. He also reminded the members that exhibitors should be regarded as guests and were invaluable to us in that their money did considerable towards paying the entertainment expenses of the Society.

The Editorial Committee of *THE HAHNEMANNIAN MONTHLY* reported, through its chairman, Dr. Bartlett, to the effect that since the Society had taken ownership, the

Journal had doubled its circulation, and now had more subscribers outside of Pennsylvania than in it, that financially the Journal had prospered and there was now a balance on the right side of the ledger, notwithstanding liberal expenditures put out to add to our circulation. The prosperity of the *HAHNEMANNIAN* and its large circulation led Dr. Bartlett to speak as follows: "I hear members say 'What is the use of writing a paper, when only forty or fifty persons come to hear it?' It is true that a man might read a carelessly prepared paper before forty or fifty men, and get away with it; but he cannot do so when it is coming before eighteen hundred, or two thousand readers. When, therefore, you write a paper now, as you will place it with an audience as large as would fill an ordinary concert hall, the Journal having 1875 readers. With such a clientele it is well worth the time of our members to prepare good papers." Dr. Julia C. Loos, of Pittsburgh, remarked that what Dr. Bartlett had said concerning papers applied with greater force to discussions and that if remarks on the floor were to be reported and read by two thousand people it was incumbent upon members to be a little bit careful as to what they said in discussions.

Dr. W. C. Seitz, of Glen Rock, and Dr. Julia C. Loos reported for the delegates to the American Institute of Homœopathy.

The Annual Report of the Superintendent of the Allentown State Homœopathic Hospital, by Dr. Henry I. Klopp then followed: I take pleasure in presenting the Seventh Annual Report to this Society. The average number of patients in the hospital for the year ending May 31, 1920, this being the fiscal year, upon which we base all our statistics, was 1110. The number of patients admitted during the year was 367. The total number under treatment was 1546. The number of admissions, from the first (this is from the opening of the hospital, October 3, 1912) was 3131, the number of persons, 2999. That last statement is important, because it shows that there were only 132 persons who were readmitted. In other words, 2999 were direct admissions without readmission. There were 299 discharges, 163 of these were for the following causes: 54, restoration; 79, improvement; 23, no improvement; 7, no insanity. The other 136 of the discharges were on account of death, making the death-rate rather high. This was accounted for by the fact that a large number of

these persons were aged patients who were admitted at the time of the opening of the hospital, as transfers from other institutions. Then the epidemic of influenza was also a factor. You will note that there is a larger number of discharged as "improved" than as "restored." We are conservative in noting those who were restored. We rather give the patient the benefit of the doubt, and make it "improved" in the statistics, than overstate the matter and discharge the patient as "restored." When the patient is put on the books as recovered, it is on the opinion of the entire medical staff. A daily conference is held to discuss not only every admission, but also every case at the time of discharge.

In reference to the number discharged, 299, you must not overlook the fact that we always have approximately 100 on furlough. At that time, May 31st, there were 92 on furlough. That is, they are permitted to go out on trial visits; and if, after a definite length of time (from sixty days to a year and a half or two years), they have had no return of the disease, they are discharged. We keep them on the books for this length of time before discharging them.

I think that is enough in the way of statistics. There are certain other facts which might be mentioned. One is that the Legislature, at its last session, was generous with the hospital. We had an appropriation for new buildings and improvements. We have absolutely no occasion for complaint of any description whatever. We have been treated fairly and squarely by the Legislature. I might say that we have had three new buildings erected, which are about to be opened—a nurses' home for women nurses, a nurses' dining-room, and a house for our manager and employes. Our institution is constantly growing in size and population. We have, in addition, two farm colonies, whereby our farm products for the hospital are increased, adding to the maintenance of the institution.

We have endeavored to maintain, during these five years, the high standard of the hospital. We have not, however, been as successful as we had hoped—partly because of an insufficient number of employes. There is a dearth of applications from women to take up nursing. This does not apply to our institution alone, but to other hospitals as well. The cost of maintenance is decidedly increased. The Government gives five dollars a week to maintain each patient, two dollars and a half of which comes from the county, and the other

half from the State. You can readily appreciate the fact that to maintain the patients, give them medical and nursing attention, clothe them, and supply them with light and fuel, and all the daily requisites which you know are important factors in the up-keep of institutions, as well as private homes, has become much more expensive than it was formerly.

In the year ending May 31st, we did succeed in maintaining the hospital at a cost of six dollars and twenty cents a week per patient. I feel confident that during the coming year, it will cost very nearly, if not all of seven dollars a week. The increase in wages and everything pertaining to the maintenance of the institution will make it a trying proposition to administer the hospital and maintain the high standard which we are endeavoring to do, and to make the institution a credit, not only to the Homœopathic Medical Society and the homœopathic profession, but also to the entire medical profession of the State of Pennsylvania. I say this advisedly, because we do have the respect of the community and we do cater to all the physicians of these respective counties; and those who apply to us from them; for the organic law of the hospital definitely provides that we can admit patients from every county in the Commonwealth, especial preference being given to homœopathic physicians. We do not want to turn down a single applicant, if we have room.

We have an annual meeting of physicians from the surrounding counties. When we can get ninety physicians to come to a clinic at the hospital on the worst possible day, as far as weather is concerned, I think we have reason to congratulate ourselves on having the good-will of the medical profession of our community. We do not carry a chip on our shoulder; but we cater to these men and do everything that we can to get their good-will. I think that in this way we are doing more good for homœopathy than we could do by crying and preaching homœopathy from the house-tops. It shows what we are endeavoring to do in the Homœopathic State Hospital for Mental Diseases at Allentown.

Dr. Edward A. Krusen, Secretary of the Medical Legislative Conference of Pennsylvania, read a resolution adopted by that body on March 19, 1920. The resolution is as follows:

"Resolved, That the Secretary of the Conference be authorized to ask the Homœopathic Medical Society of the State of Pennsylvania, for a donation of five hundred dollars

for the use of the Medical Legislative Conference of Pennsylvania." On motion of Dr. Krusen, seconded by Dr. Bartlett, this resolution was adopted.

The very serious illness of the Treasurer, Dr. Ella D. Goff, was brought to the attention of the Society by Dr. G. Morris Golden, of Philadelphia, who moved that a telegram be sent expressing the sympathy and best wishes of the Society. This motion was seconded and carried.

A report was called for from the committee appointed to consider the feasibility of having one fee to cover dues in both State and County Societies. The report was presented by the chairman of the committee, Dr. Clarence Bartlett, of Philadelphia, who stated the opinion of the committee that the plan was not feasible. On motion, this report was accepted and the committee discharged.

Letters were read from Dr. Charles Platt, of Ardmore, and from Dr. William W. Van Baun, of Philadelphia, in which they stated that, having retired from the practice of medicine, they tendered their resignations from membership in the Society. It was also announced to the Society at this time that Dr. Robert P. Mercer, of Chester, had retired from the practice of medicine.

The resignation of Dr. Platt was not accepted, but, on motion, seconded and carried, Dr. Platt and Dr. Mercer were continued as members with dues remitted. The resignation of Dr. Van Baun was accepted. On motion, seconded and carried by unanimous consent, the by-laws were set aside and Dr. Van Baun was elected to Honorary Membership in the Society.

The President appointed Dr. William M. Hiliegas, of Philadelphia, and Dr. John W. Stitzel, of Hollidaysburg, as Censors, to assist Dr. William Raymer, of Beaver Falls, the other two members of the Board of Censors not being present.

The President then requested the First Vice-President, Dr. George W. Hartman, of Harrisburg, to take the chair while he delivered the President's Address. (For President's Address, see *HAHNEMANNIAN MONTHLY*, November, 1920). The First Vice-President appointed the following committee on the President's address: Dr. Harry S. Weaver, of Philadelphia; Dr. J. Ross Swartz, of Harrisburg; Dr. George B. Moreland, of Pittsburgh; Dr. J. W. Stitzel, of Hollidays-

burg, and Dr. Henry I. Klopp, of Allentown. The First Vice-President then resigned the chair to the President.

Dr. Bartlett moved that a committee be appointed to prepare a revision of the by-laws and have a draft of this revision printed and sent to each member not later than April 1, 1921. This motion was seconded and carried.

The President appointed as Auditors Dr. Golden and Dr. Hillegas.

The morning session adjourned at 12.10 P. M.

AFTERNOON SESSION.

The Society was called to order by the President at 2.45 P. M., and immediately turned over to the Chairman of the Section of Sanitary Science, when the following program was carried out: Section of Sanitary Science. Chairman, Dr. Paul H. Gerhardt, of Reading. "The Physician's Part in the Public Health Program," by Dr. Edward Martin; "The Plan of the Venereal Division," by Dr. Leo S. Gans, Harrisburg. Dr. J. C. Funk, representing the Housing Bureau, spoke on the question of quarantine and court action in venereal cases. "Present Day Needs of Child Hygiene," by Dr. Taliaferro Clark; "The Venereal Problem," by Dr. Edward K. Golding, of Reading; "The Program of Child Health in the State of Pennsylvania," by Dr. Ellen C. Potter, Harrisburg; "Hygiene for School Children," by Dr. Hillegas; "Insidious Causes of Disease," by Dr. Gerhardt; "Diet: Its Importance to the General Practitioner," by Dr. Harry M. Eberhard, of Philadelphia, read by title.

Papers in the Section of Sanitary Science were discussed by Drs. Dinsmore, Tomlin and Howard Terry, Phoenixville. This completed the section and it adjourned at 4.45 P. M., when the meeting was turned over to the Section of Homœopathic Institutes and Clinical Medicine, Chairman, Dr. Robert W. McClelland, of Pittsburgh, with the following program: "The Management of the Heart in the Acute Infectious Diseases," by G. Harlan Wells, of Philadelphia; "Special Methods in Clinical Diagnosis," by Joseph E. Johnston, of Pittsburgh; "The Acute Medical Abdomen," by Dr. Bartlett; "Precordial Pain: Its Clinical Significance," by Dr. Golden; "A Clinical Case of Hematemesis," by Dr. E. S. Snyder, of Lancaster. The section adjourned to convene the following morning.

On the evening of Tuesday, September 21st, a special

session was held for the consideration of Compulsory Health Insurance, a report of which may be found in its entirety in our December issue.

Following the conclusion of the above meeting the Society was entertained at a smoker held at the Harrisburg Club.

WEDNESDAY, SEPTEMBER 22ND.

MORNING SESSION.

The Society was called to order by the President at 9.45 A. M., and immediately turned over to the Chairman of the Section of Homœopathic Institutes and Clinical Medicine, which had failed to finish on the preceding day. The following program was then carried out: "Forty Years' Experience with Aconite," by S. W. S. Dinsmore, of Sharpsburg; "The 'Flu' Epidemic of 1920," by Anna Johnston, of Pittsburgh. Dr. Johnston's paper was discussed by Dr. John G. Wurtz, of Pittsburgh. "The Management of Pneumonia," by Robert W. McClelland, of Pittsburgh. Dr. McClelland's paper was discussed by Drs. Wurtz, R. E. Tomlin, of Lakewood, N. J.; Irvin D. Metzger, of Pittsburgh, and Dr. Anna Johnston. The following papers were read by title, the essayists not being present: "Some Experiences with Kidney Conditions," by Charles I. Wendt, of Pittsburgh, and "A Resumé of the Causal Factors and Modern Treatment of Malignant Neoplasms," by Ralph Bernstein, of Philadelphia.

The President resumed the chair at 11 A. M., when a business meeting was held for the purpose of nominating officers to serve during the ensuing year.

The following program was presented for the Section of Ophthalmology, Otology and Laryngology, Chairman, Dr. J. W. Stitzel, of Hollidaysburg: "Neuro-Labyrinthitis," by Dr. George W. Mackenzie, of Philadelphia; "Circumscribed Labyrinthitis: Report of a Case," by Dr. George J. Alexander, of Philadelphia. The foregoing papers were discussed together by Drs. Paul H. Gerhardt, Dr. Joseph V. F. Clay, of Philadelphia; Seymour B. Moon, of Pittsburgh; John W. Stitzel. The discussion was then closed by Drs. Mackenzie and Alexander. "Conservation of Hearing," by Dr. Joseph V. F. Clay. This paper was discussed by Dr. Mackenzie. "Ocular Syphilis," by Dr. George H. Haas, of Allentown; discussed by Drs. Mackenzie and J. V. F. Clay. "Vincent's Angina," by

Dr. William A. Doeble, of Philadelphia; discussed by Drs. Harry S. Weaver, of Philadelphia, and Paul H. Gerhardt. "Eye Ulcers," by Dr. J. W. Stitzel, of Hollidaysburg. This paper was read by title, on account of the late hour. "A Few Things Every Practitioner Should Know About Ear Work," by Dr. Henry Bierman, of Bloomsburg. Read by title, essayist not being present.

AFTERNOON SESSION.

The meeting was called to order by the President, at 2.40 P. M. The Chairman, Dr. Samuel Friedman, of Scranton, of the Section of Materia Medica and Provings not being present, the President appointed as Acting Chairman, Dr. Anna C. Clarke, of Scranton and immediately turned the chair over to her. The following program was then carried out: "Eucalyptus Globulus with Reference to Its Utility in Certain Types of Gastric Disorder," by Dr. Oliver S. Haines, of Philadelphia, discussed by Drs. Trimble Pratt, of Media; Irwin B. Gilbert, of Philadelphia. The discussion was then closed by Dr. Haines. "Carbo Vegetabilis: A Life Saver," by Dr. Robert L. Piper; discussed by Drs. Loos and Haines. Dr. Piper then closed the discussion. Dr. W. B. Hinsdale, of Ann Arbor, Mich., then, by invitation, gave a talk on "Laboratory Experiments in Homœopathy from the Standpoint of the Homœopathic Symptomatology of Drugs."

The Chairman then called upon Dr. Charles E. Sawyer, of Merion, Ohio, and upon Dr. Thomas A. McCann, of Dayton, Ohio, President of the American Institute of Homœopathy. These gentlemen discussed Dr. Hinsdale's paper and talked on Homœopathy. On motion, the Society expressed its appreciation of the paper presented by Dr. Hinsdale by a rising vote of thanks. "Potential Homœopathic Remedies," by Dr. Anna C. Clarke. This paper was read by title on account of the late hour. This completed the program of the section and it adjourned at 4.30 P. M.

On the conclusion of the Section of Materia Medica, the meeting was turned over to the Chairman of the Section of Paedology, Dr. Edwin C. Blackburn, of Lock Haven, at 4.45 P. M., when the following program was carried out: "Constipation: Its Causes and Treatment," by Dr. Charles H. Seybert, of Philadelphia, "Diseases of the New-Born," by Dr. C. Sigmund Raue, of Philadelphia; "Why Let Children Die?" by

Dr. Margaret Hassler, of Reading, and "Tonsilitis," by Dr. Blackburn. The papers of this section were, on motion, discussed together at the end of the section by Dr. Wurtz, Howard Terry, of Phoenixville, Loos and Snyder. This completed the program and the section adjourned at 6 P. M.

EVENING SESSION.

A banquet for the members and ladies was held at the Penn-Harris Hotel, at 7 P. M. Dr. G. Harlan Wells, of Philadelphia, acted as toastmaster, and the speakers included: Drs. Thomas E. Finegan, of Harrisburg; Charles E. Sawyer, Thomas A. McCann and Claude A. Burrett, of Columbus, O.

THURSDAY, SEPTEMBER 23RD.

MORNING SESSION.

The meeting of the Society was called to order by the President at 9.40 A. M. The President called for reports of committees. The Committee on the President's Address reported as follows: "The Committee on the President's Address beg leave to submit the following report: First, we wish to congratulate the President on his excellent and timely address. Secondly, we heartily agree with the President on the stand he has taken concerning the Federation of States, in that every member of the American Institute of Homœopathy should also be a member of his Local and State Society, as well as the American Institute of Homœopathy. In other words, that organization should begin with the local Society and lead up to the State and National Societies. We also agree that the interests of the homœopathic profession can be better served by a closer affiliation between our State and National organizations and that each member should be willing to make personal sacrifices when necessary for the good of the homœopathic profession. We also heartily endorse the stand taken by the President in the field of preventive medicine and would urge that we as individual physicians, should give all the assistance within our power to aid the State Board of Health in its campaign of education in teaching mothers how to best care for their children during the early period of child life." Signed by the Committee, J. W. Stitzel, H. S. Weaver and J. R. Swartz.

It was moved, seconded and carried that this report be accepted and entered upon the minutes.

The Committee on Resolutions reported as follows: "Your Committee desires to offer the following resolutions: 1. That we express to the manager of the Penn-Harris our appreciation of his efforts to give our Society ample facilities for conducting its various departments and of the special courtesies extended to its members throughout the session. 2. That we congratulate the President, Dr. Piper and his associate officers on their ability to lead us through a successful year of administration which has terminated in this excellent convention. 3. That we thank the members of the Central Homœopathic Medical Society of Pennsylvania, and especially its local committee for the generous entertainment furnished by them to the Society and its friends. 4. That we express to the public press and its representatives our appreciation for affording the Society adequate publicity." Respectfully submitted (signed) William M. Hillegas and Irwin D. Metzger.

On motion, this report was accepted.

The President then announced his appointment of the Committee to Draft a Revision of the By-Laws as follows: Drs. Bartlett and Hillegas, of Philadelphia, and George B. Moreland, of Pittsburgh.

The President then turned the chair over to the Chairman of the Section of Surgery, Gynecology and Obstetrics, Dr. George W. Hartman, of Harrisburg, when the following program was carried out: "Tumors of the Urinary Bladder," by Dr. Leon T. Ashcraft, of Philadelphia; "How Should Cancer be Treated?" by Drs. Herbert L. Northrop, Frank C. Benson, Jr., and Walter C. Barker, all of Philadelphia. Dr. Northrop read the paper of Dr. Benson in his absence. The papers were discussed together by the following: Drs. J. D. Elliott, R. M. White and John C. Calhoun.

Report of a committee appointed by the President from the Board of Trustees to consider the question of Federation with the American Institute of Homœopathy. This committee consisted of Drs. Bartlett, Chairman, Moreland and Wells, Secretary. The committee reported through its chairman that it had conferred with Dr. Charles E. Sawyer as representing the American Institute of Homœopathy and presented as its recommendations the following resolution: "We accept the principle of Federation as recommended by the American Institute of Homœopathy. We further recommend that the Congress of States take as its function the conduct of business af-

fairs of the institute. That in the near future arrangements be perfected to co-ordinate the workings of County, State and National organizations." (Dated) September 22, 1920. (Signed) G. Harlan Wells, Secretary.

Dr. Irwin D. Metzger, of Pittsburgh, moved that these resolutions, as read, be adopted as the action of the State Society. This motion was seconded and carried.

The Report of the Auditors was presented by Dr. Golden. This committee reported that it had audited the accounts of the Treasurer and found the same to be correct. On motion of Dr. William M. Sylvis, this report was accepted.

The Society then proceeded to the election of officers. There being no contest except for Trustees, Dr. Hillegas moved that the Secretary be directed to cast the ballot for all the officers as nominated, excepting for the nominees for Trustee. This motion was seconded and carried.

The Secretary then announced as elected officers for the ensuing year the following:

President—Dr. George W. Hartman, of Harrisburg.

First Vice-President—Dr. William W. Speakman, of Philadelphia.

Second Vice-President—Dr. Anna Johnston, of Pittsburgh.

Secretary—Dr. J. Miller Kenworthy, of Philadelphia.

Treasurer—Dr. Ella D. Goff, of Pittsburgh.

Assistant Treasurer—Dr. Julia C. Loos, of Pittsburgh.

Necrologist—Dr. John C. McCauley, of Rochester.

Censor (to serve three years)—Dr. William Raymer, of Beaver Falls.

Trustees—Dr. Robert L. Piper, of Tyrone; Dr. William M. Sylvis, of Philadelphia; Dr. John C. Calhoun, of Pittsburgh.

The chair was then returned to the Chairman of the Section of Surgery, Gynecology and Obstetrics, and its program was resumed as follows: "Acute Suppurative Osteomyelitis," by Dr. J. Dean Elliott, of Philadelphia; discussed by Dr. John A. Brooke, of Philadelphia. "Infection of the Biliary Tract," by Dr. A. B. Webster, of Philadelphia; "Treatment of Club-foot," by Dr. John A. Brooke; "A Report of Two Very Unusual Cases," by Dr. Nathaniel F. Lane, of Philadelphia; "The Acute Surgical Abdomen," by Dr. George W. Hartman, of

Harrisburg. This paper was discussed by Dr. Robert V. White, of Scranton.

The following papers were read by title, in the absence of the essayists: "The Role of Surgery in the Development of Our Knowledge of Thyroid Function and Pathology," by Desiderio Roman, of Philadelphia; "Must Women Suffer During Labor? If so, What is the Irreducible Minimum? A Plea," by Morris M. Fleagle, of Hanover. This completed the program and the section adjourned at 1 P. M.

AFTERNOON SESSION.

The meeting was called to order by the President at 2.30 P. M. The following resolution was offered by Dr. Hillegas:

"Resolved, That the Homœopathic Medical Society of the State of Pennsylvania heartily endorse the efforts of Dr. Thomas E. Finegan, Superintendent of Public Instruction of Pennsylvania to introduce a systematic course of health instruction in the schools of the State and hereby pledges the aid of its members in accomplishing his outlined purposes." On motion of Dr. Hillegas, seconded by Dr. William A. Pearson, of Philadelphia, this resolution was adopted.

The President at this time expressed his appreciation of the assistance given him during the preceding year by the physicians of Pennsylvania and also of the work of the members of the Central Homœopathic Medical Society of Pennsylvania in arranging for this meeting. He then turned the chair over to the Chairman of the Section of Pathology and Pathological Anatomy, Dr. George A. Hopp, of Philadelphia, and the following program was carried out: "The Leucocytes in Surgical Conditions of the Abdomen," by Dr. John G. Wurtz, of Pittsburgh; discussed by Dr. Othmar F. Barthmaier, of Philadelphia; "Protein Therapy," by Dr. Othmar F. Barthmaier; discussed by Drs. Wurtz, Hopp, Tomlin, C. R. Miller, of Steelton, and Thomas D. Mills, of Harrisburg. The discussion was closed by Dr. Barthmaier. "A Study of Spinal Fluid in Cases of Psychoses with Cerebral Arterio-Sclerosis," by Dr. Lydia Baker Pierce, of Allentown; "Syphilis in Children," by Dr. Hopp; discussed by Drs. Loos and Harry M. Read, of York. The discussion was closed by Dr. Hopp. "A Study of Epidemic Streptococcus Infection in the Wards of Hahnemann Hospital, of Philadelphia," by Dr. Charles W. Ursprung, of Lancaster; discussed by Dr. Nathaniel F. Lane, of Philadel-

phia; "Diphtheria," by Dr. Harry M. Read, of York; discussed by Dr. Julia Loos. In the absence of the essayist, the following paper was read by title, "The Marrow Factor in Grave Anemias," by Dr. S. W. Sappington, of Philadelphia.

This completed the program of the section and the chair was returned to the President.

The President declared the Fifty-seventh Annual Meeting of the Society adjourned at 4.20 P. M.

ACUTE SUPPURATIVE OSTEOMYELITIS.

BY

J. D. ELLIOTT, M.D., F.A.C.S., PHILADELPHIA.

(Read before the Homœopathic Medical Society of Pennsylvania, Sept. 22, 1920.)

THE term "acute suppurative osteomyelitis," is a misnomer if it suggests that the disease runs a short course, for it is truly an exceptional case that does not become subacute and finally chronic. The usual history is a sudden, fulminating attack, followed by a long drawn out, exhausting convalescence in which acute exacerbations flare up when least expected.

The reason for offering this paper is that, in spite of a voluminous literature upon the subject, I feel convinced from our experience that an accurate knowledge of this disease, so dangerous both to life and health, has not been freely disseminated or understood. As a result the patient is indeed fortunate who reaches the operating table when it is still possible to confine the damage to the bone within narrow limits, and before the system has been saturated with poisonous products. As a matter of fact, nature has usually intervened and by allowing pus to escape from the deeper structures has relieved the most dangerous symptoms before the true condition has been recognized. Unfortunately, nature's method of cure, as in many other circumstances, is awkward and tedious and, though it may prevent a fatal outcome, very great damage is done before it is instituted.

A number of different kinds of bacteria have been isolated from bony infections, but the vast majority are due to the staphylococcus which seems to be especially virulent in this

lesion, particularly in its ability to set up grave constitutional disturbances and metastatic abscesses. Much less frequently the streptococcus or pneumococcus is the causative organism, but a pure culture is the general rule in whatever variety the bacteria are isolated. The common method for them to reach the bone is through the blood stream, although they may do so directly from the surrounding soft structures, notably in bone felons, or the lymphatics may carry them from neighboring infections.

Whatever the mode of entry their favorite site to lodge is in the medullary spaces of the diaphysis close to the epiphyseal line. This is a fortunate location, for the epiphyseal cartilage nearly always prevents the spread of infection into the nearby articulation, so a useful joint results in the great majority of patients, even when chronic inflammation with massive destruction of bone has persisted for a number of years.

In considering the pathology, which will only be briefly touched upon, it is important to bear in mind that bone is one of the connective tissues and that it differs from the others only in the deposition of lime salts. This, however, has considerable bearing on the ordinary phenomena of acute inflammation. The blood supply is from two sources, the periosteal and the nutrient arteries, the latter nourishing much the greater portion, as the periosteal vessels penetrate only the superficial layers before they divide into capillaries and anastomose with those from the endosteum. With the exception of the firm cortex, bone, in youth, is very vascular, the vessels lying in spaces which vary in size from the wide medullary canal to the narrow Haversian systems, but each is surrounded by a firm wall. This prevents swelling from spreading externally and forces the exudate to encroach upon these already limited spaces with resulting pressure upon vessels, which narrows their lumens and soon leads to thrombosis. In addition to the blood vessels, these spaces contain lymphatics, fat and a variety of bone cells which go to make up marrow. Such bony cavities form ideal incubating chambers and it is an easy matter for the bacteria to go from one to another, so that in a very short space of time the circulation of large areas of bone is destroyed with death and liquifaction of the soft structures and the remaining firm trabeculae of bone lie in abscess cavities.

Nature attempts to wall off and isolate the infected and

damaged tissue by the formation of new bone, the involucrum, derived largely from the periosteum. At first this is a thin, vascular, rapid-growing shell, but as time goes on it closely resembles cortical bone, and when this stage is reached the growth is almost entirely on the exterior and the deeper layers are dense and have poor reparative powers. This fact is of importance in treatment as it makes it difficult for a cavity to fill out, even after all the offending bone and debris have been removed. The dead bone is gradually loosened by a layer of granulation tissue and when this has been accomplished it is cast out through openings in the involucrum, the cloacae, which lead to the surface by way of sinuses through the soft parts. These sinuses may be short and extend directly from the bone to the surface, but ordinarily they are long, tortuous and difficult to follow with a probe. They are lined by pale, feeble, exuberant granulations which pout out on the surface and bleed easily, while rough, perhaps loose, fragments of bone can be felt at their bottom, and from time to time spicules of bone are discharged through them. This is the appearance of osteomyelitis after it has become chronic and it will persist in this condition indefinitely, except when the sinuses become blocked and the excretion is retained, at which time an abscess forms with its accompanying redness and swelling of the overlying tissues and a general toxemia.

The cancellous ends of the long bones, particularly the femur and tibia, are the usual starting points of these lesions, and the easiest route for the spread of the bacteria is through the marrow in the cancelli towards the medullary canal. When the latter has been reached further extension is rapid and the entire canal may be changed to an abscess cavity, the endosteal vessels become thrombosed and the bone supplied by them dies. At the same time the infection works its way through the Haversian canals to the cortex and the periosteum becomes congested, edematous and stripped from the bone by pus beneath it. Though it may be possible for a suppurative pericystitis to originate independently of an osteomyelitis, clinical experience has proved that it practically never occurs but is always secondary to a myelitis. For this reason a subperiosteal abscess always calls for an exploration of the medulla.

In the explosive type of this disease the extension is so rapid that large, multiple abscesses develop within twelve to twenty-four hours. Fortunately, all cases are not of this type,

and we have operated upon patients who have been ill for several days or a week without massive necrosis, but this offers no better excuse to procrastinate than does the possibility of nature limiting a spreading peritonitis excuse us from doing an immediate laparotomy. In fact, I believe bone marrow has less power of circumscribing infection than has the peritoneum. Another propensity of this disease is the development of metastatic abscesses, not infrequently a second bone becomes involved, and I have always remembered a child in whom we drained the upper end of the femur within 48 hours of the first symptom, only to have secondary infection in the radius, opposite tibia, both parotid glands and finally the lungs within ten days. Another interesting case was one we treated in Abington Memorial Hospital last autumn. This lad's temperature was 105 degrees on admission and he complained of great pain around the left hip joint. Operation revealed an acute osteomyelitis of the ileum, but a second incision disclosed destruction of the greater part of the head of the right tibia which had evidently occurred prior to the abscess in the ileum. Yet he had made no complaint about the tibia and we were never able to obtain a history of pain in this region.

One point in the diagnosis of this case was of special interest to us and I would like to mention it in passing. The pain and tenderness were exquisite, the thigh was adducted, rotated inward, but was held in extreme extension, while flexion was seriously interfered with. A quite thorough search of a number of works on general and orthopedic surgery failed to disclose extension described as a symptom of disease of any of the structures about the hip joint, and the only reference we found to it was by Murphy who happened to state that the limb was extended while describing a case of osteomyelitis of the ileum in one of his clinics. Flexion of the hip is present in so many conditions that extension may be of considerable value in distinguishing them from iliac disease.

The epiphysis is attacked in a small percentage of the cases and this may seriously interfere with the future growth of the bone, particularly if the epiphysis becomes separated from the diaphysis; or the infection may spread from it into the joint with a correspondingly poor outcome. These possibilities should be considered when deciding upon the prognosis and the type of operation to be carried out.

While pain is usually the most prominent symptom it is

well to remember that it may be slight, absent, or the patient's mental condition so dulled that it will not be perceived. However, in the majority of cases, it comes on suddenly, is very severe, is increased by whatever will cause congestion, for instance, dependent position of the limb, and the sufferer will resist any but the most gentle manipulation. It may be referred to the exact seat of the inflammation or be more generalized in this region.

The constitutional symptoms appear at about the same time as the pain. They are profound, the fever, perhaps preceded by a chill, rises suddenly and rapidly to a high degree (103-105) and is continuous, morning remissions being slight. The pain may prevent rest or sleep, but the patient is greatly prostrated, stupid and often moderately delirious. The pulse is rapid, the tongue is coated and dry, the face is flushed and pinched, the leukocyte count is high, though we have seen several exceptions to this rule, and an early marked anemia is one of the important blood changes.

Of more value than pain, in spite of being less spectacular and less easily perceived, is subcutaneous tenderness which is always present. It is quite well limited to the affected area and is usually obtained from the lightest touch, but may require firmer pressure to bring it out. Of such importance is this symptom that when it is accompanied by fever a tentative diagnosis of osteomyelitis should be made and only given up when sound proof of another lesion is obtained.

Swelling is not a characteristic early symptom, in fact, it is often absent at the beginning, later it appears as an edema, is diffused and only becomes hot and red when the bacteria have invaded the soft structures. Of course, such definite signs of suppuration as fluctuation and discharge, are not present until the pus actually nears or breaks through the skin, and then they show that much valuable time has been lost before beginning the proper treatment.

The neighboring joint is swollen, but not tense, as the swelling is due to a protective exudate of serum and fibrin, the skin over the surface is not reddened, there is slight, if any, tenderness and gentle passive motion is not painful, although active movements may be refused. An examination will demonstrate that the tenderness and the bulk of swelling does not center over the joint but is at one side, and the application of light pressure for a short time to a distant, unaffected part

of the bone will cause sudden pain in the inflamed portion, but none in the joint.

The disease is typically one of childhood and adolescence, about one-half of the cases occurring between the thirteenth and seventeenth years, but it is not rare in adult life. Boys are affected several times more often than girls, probably due to a more active life. It frequently develops at the site of a slight injury, the incorrect diagnosis of a sprain or a fracture being a common but unfortunate mistake. In conjunction with the injury the patient usually presents a primary infective focus from which the bacteria are implanted into the injured bone, slight, suppurating wounds, furunculosis, tonsilitis, and a remote abscess having been the most common in our experience.

A diagnosis is often difficult, perhaps at times impossible, but the majority of cases can be recognized if these various, well-known factors are borne in mind. Certainly the difficulties are not sufficient to excuse the very many mistakes that are being constantly made. Too much attention is paid to the treatment of the general systemic symptoms without a careful physical examination of the bones and joints, yet there is not a disease with which I am familiar that requires an immediate, correct diagnosis more imperatively than does this one. Some cases must be differentiated from typhoid fever, but this can easily be done by the leukocyte count and the presence or absence of a positive Widal. Others simulate acute rheumatic fever, but in it the joint is directly involved, there is redness and swelling of the superficial tissues, prostration is not so profound, the temperature shows marked remissions and it is seldom that only one joint is involved. A septic arthritis may be single and is commonly preceded by a history of an infective focus and slight trauma, but puncture of the joint should demonstrate the true condition. However, in such small joints as the carpal or tarsal which are contiguous to and surround the bones the difficulties may be extremely great.

The X-rays are of little, if any value, except when they show some other lesion, as syphilis, tuberculosis or fracture. Rarefaction or an abscess possibly may be evident to a very experienced roentgenologist when the corresponding bones of both sides are compared, but even this is doubtful, and we should be able to base a diagnosis upon more certain grounds. The usual mistake, on the part of both clinician and roentgen-

ologist, has been to overlook the bone when the X-rays picture was negative. Much knowledge can be gained from these examinations when the subacute and chronic stages have been reached, but none at the beginning when it would be most valuable.

The prognosis is always grave and is to be guarded as to life and a useful limb. Early death occurs from septic intoxication, from true pyemia with secondary abscesses in other bones or important organs, or the lungs or the heart or blood vessels may be the seat of septic thrombi. Death may later ensue from an infective embolus setting up fresh lesions or through exhaustion from prolonged sepsis.

As already stated shortening may take place through the epiphysis becoming inflamed or separated, or from so much bone having been destroyed that it cannot be replaced; or deformity may develop from faulty position while the bone is being regenerated.

At best the patient faces a prolonged illness, with a slow, tedious recovery and repeated operations to keep infected pockets open and to remove multiple sequestra, and this outlook is correspondingly darkened the longer the primary operation is postponed.

The treatment readily divides itself into two stages: First, the relief of tension during the acute symptoms, and, later, the removal of the necrosed bone.

We long ago discarded the older idea of a primary, suppurative periostitis and all such inflammations have since been treated by immediately making a free opening into the medulla beneath them. Sufficient cortex to allow thorough inspection can be removed with impunity; if pus is discovered the overlying bone should be taken out over the entire tract and when the medullary canal is found to be invaded it should be opened throughout the extent of frank pus in it. It is well to remember that the medullary spaces unite with each other so that an incision through the cortex will allow drainage of the entire circumference of the bone beneath it and that repair of bone is carried on by the endosteum as well as the periosteum. Therefore, wide curetment and removal of the cancellated bone and marrow are unnecessary, and every effort should be exerted to save as much of these tissues as is compatible with free drainage. It is needless to add that excision of the periosteum is never indicated and that its osteogenetic powers are

rarely interfered with. After free incision into the bone considerable oozing will persist and will usually require packing, but this pack can be safely removed within twenty-four to forty-eight hours, if necessary. During the remainder of this stage of the disease treatment should be directed toward free drainage, cleanliness and building up of the patient.

The *modus operandi* of the next step is not so easily decided upon. A number of methods have been suggested and each has its advocates. The so-called "ideal operation," an early, superiosteal resection of all diseased bone, has not been followed by the success that was anticipated. Theoretically, such excision would allow rapid periosteal repair and eliminate, to a large extent, the abscesses which develop during ordinary healing, but in too many cases such radical removal has been followed by failure of the bone to regenerate. When there is only one bone, as the femur or humerus, it is very difficult to prevent marked deformity from occurring while new bone is being formed, therefore, this operation should never be attempted when there is not a second bone to act as a splint.

A better plan is to allow the sequestrum to separate and then remove it. In the meantime the periosteum has thrown out a fairly firm involucrum and this retains the proper position of the limb. Unfortunately if too much time is allowed to elapse the deeper layers of the involucrum become dense and lose a large part of their ability to generate new bone and the remaining cavity is difficult to heal. The best results are obtained by removing, at as early a date as possible (4-6 weeks), sufficient bone to allow the soft parts, including the periosteum, to fall in and obliterate the cavity. This is accomplished in the shaft by removing the sides of the cavity, and changing it into a trough; the defect is then filled by solid bone which later assumes a normal character. This procedure was performed quite successfully in treating gun-shot wounds during the war; but in the class of cases which we are discussing a triangular space, due to the wide epiphysis at its base, will remain. For this reason it is impossible to carry out the exact technique which we have mentioned, but we have hastened healing by a much more free removal of the cortex and sequestrum than was our former plan. The application to the dead space of bismuth paste or Moorhof's iodoform wax undoubtedly aids in the filling in process, but we have been

unable to obtain primary closure of such a wound. The paste has been gradually extruded and has required replenishing from time to time.

The same principles are applicable to closing chronic cavities, but in them the difficulties are even greater for the newly formed bone is much denser, much more abundant and has little reparative power. However, the removal of all sequestra and sufficient bone to allow the soft parts to eradicate as much of the cavity as possible offers the best prognosis.

SUMMARY.

1. Acute suppurative osteomyelitis is a frequent disease of childhood and adolescence.
2. It is too often overlooked in the early stages.
3. It always originates in the medulla, never in the periosteum, and spreads rapidly in the bone before reaching the surface.
4. Fever and tenderness over the end of a bone are the most characteristic symptoms.
5. During the acute stage immediate trephining of the bone is urgently demanded to relieve tension and provide drainage.

DISCUSSION.

DR. JOHN A. BROOKE, of Philadelphia, remarked: There are just a couple of things that I should like to emphasize a little more in particular. Some physicians are in the habit of waiting for definite X-ray findings before making a diagnosis of acute osteomyelitis. When these changes are present, however, bone destruction has progressed so far that you are bound to have a chronic process and a long drawn-out convalescence. It is very unwise to wait until changes are noticeable in the radiograph before giving the condition surgical attention. I mention this merely to emphasize it.

One other thing that I want to call attention to is epiphysitis. This is a very destructive process and is sometimes fatal. It is apt to leave a permanently disabled joint. It is likely to be found in young children. It is sometimes syphilitic; the process is then a more gradual one than when dependent on some pyogenic organism. In the latter case it is very acute and destructive. Occasionally tuberculosis may extend from the joint along the shaft of a long bone and set up a tuberculous osteomyelitis. This, however, is not so acute and does not follow the same course as the other infections.

VINCENT'S ANGINA.

BY

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(Read before the Homœopathic Medical Society of Pennsylvania, Sept. 22, 1920.)

IN presenting this subject I desire to call your attention to what I believe to be a rather common condition, often unrecognized; to make a plea for early diagnosis, which means the early institution of proper treatment.

In preparing this paper I have reviewed much of the recent literature and have combined with this my own observations on sixteen cases studied during the past two years.

DEFINITION.—Vincent's angina is an infectious and contagious disease, characterized by the formation of superficial or deep ulcerations covered by a pseudomembrane, usually situated on the buccal or pharyngeal mucosa, but occurring in other localities, undoubtedly caused by the activities of the fusiform bacillus and a long, thin spirillum.

HISTORY.—The organisms were first described by Miller, an American dentist, in 1883;¹ later, by Rauchfus, in 1893; and by Plaut, in 1894. However, Vincent, in 1896, wrote the first comprehensive article on the organisms and the clinical manifestations of the disease, thereby creating the designation "Vincent's angina."

ETIOLOGY.—There are no statistics obtainable giving the prevalence of this disease in United States, but from the number of cases reported recently and those discussed with associates, it is undoubtedly not an uncommon occurrence. Vincent claimed that it caused 2 per cent. of all anginas. Rolleston said that it constituted 7 per cent. of all cases of sore throat in Grove Hospital, London, in 1913. Rodella found the specific organisms in about one-third of all the pseudomembraneous anginas he examined.² In times of peace it caused 2 per cent. or 3 per cent. of all throat complaints in the French Army. During the recent war there was a marked increase in the number of cases, especially in the trenches where it was termed "trench mouth." Bouty reported,³ in 1917, that statistics from a British military hospital in France gave as high as 23 per cent., and Campbell and Dyas, Captains in

the Canadian Army say,⁴ "Now (however) it is so prevalent that it may be classed as among the commonest of disabilities among the troops."

Vincent's angina occurs most frequently in children and young adults of either sex, but no age is exempt; it has been reported in infants fourteen and eighteen months old.⁵

While this disease is occasionally seen in patients in good general health and whose living conditions are excellent, it is more likely to attack those whose surroundings are unhealthy or whose vitality is lessened for one reason or another. A good example of this is the spread of ulcerative gingivitis, or trench mouth, in France during the war, where the men, often below par, were living in unsanitary surroundings and unable to observe personal cleanliness. Measles, scarlet fever, whooping cough, diphtheria, syphilis, tuberculosis, leukemia and other debilitating conditions often pave the way for infection. Mercurial stomatitis unquestionably is an etiological factor, and Vincent, himself, believed that the abuse of tobacco was also a predisposing cause. Any condition lowering the vitality of the local tissues, such as pyorrhea, dental caries or diseased tonsils, is of great etiological importance. Crowns, bridges and even plates, acting as local irritants and because food particles are apt to lodge under them, may furnish excellent incubators, more so because of the lack of free access of air.

Bacteriology.—The examination of smears made directly from the surface of the lesion may show a great variety of organisms, but if made from the deeper portion of the ulcer the two described below will tend to predominate:

1. The bacillus fusiformis is from four to twelve microns in length (two to three times that of the Klebs-Loeffler bacillus) and two to six microns in width, with ends pointed, body straight or curved, and thickest in the middle, where there is often a single transverse, colorless band. They are often arranged in pairs and sometimes contain many granules which give them a beaded appearance. It is usually considered Gram negative and stains readily with the ordinary dyes.

2. The spirochetes which invariably accompany these are slender, of fairly large size, being six to twenty microns long and two to four microns in width, pointed at the ends and having two to twelve wide, irregular convolutions. They stain feebly with ordinary dyes, though more than the spirocheta pallida, and are Gram negative.

Dark field examination shows both forms very active and darting across the microscopic field so rapidly that it is difficult to distinguish their morphology.⁶

Whether these organisms are two distinct bacteria always growing in symbiosis or different forms of the same organism, is a mooted question, and while of scientific interest, is of little practical importance.

The cultivation of these anaerobes has been found very difficult by most observers, and in culture the morphology is variable, thus lending strength to the theory that they are different forms of the same organism.

Inoculation experiments from both the original material and pure cultures have been unsuccessful in the hands of most observers, but Greeley⁷ claims to have produced a small ulceration near the meatus on the penis of a rabbit. The organisms present were nearly entirely bacilli, but an occasional spirillum could be seen. This failure to fully satisfy the postulates of Koch has raised the question of their pathogenicity, especially when we take into consideration the facts that other disease-producing germs are usually present, and that the organisms may be present in the mouth or throat without producing the typical lesions. Their constant presence in the typical lesions and the finding, by Tunnickliff,⁸ of the fusiform bacillus and the spirillum, especially the latter, in the normal tissues below the lesion makes it seem impossible to regard them as otherwise than pathogenic organisms.

Association with Other Bacteria.—Cultures and smears, especially if made on the surface, usually show mixed infections with other organisms, such as, pneumococcus, streptococcus, staphylococcus, spirocheta pallida and Klebs-Loeffler bacillus. Diphtheria and Vincent's angina in combination is rare and the patient is usually very sick. A patient with Vincent's angina in contact with a diphtheria carrier may readily become infected.⁴

Distribution of Organisms.—There is a great diversity of opinion regarding the frequency of the presence of these organisms in normal mouths, but I think it proper to consider them to be occasionally the inhabitants of normal mouths, much the same as we have diphtheria carriers. There is no doubt that they are apt to be present about carious or unclean teeth, especially if pyorrhea or gingivitis is present. They doubtless are a factor in ulcerative stomatitis, noma, and ulcer-

ative balanitis. The organisms have also been found in cases of bronchitis. Kiefer⁹ states that they have been demonstrated in the middle ear and external auditory canal, in supuration of the accessory nasal sinuses, gangrene of the lungs, buboes, cerebro-spinal fluid, cerebral abscess and in meningitis, and that the lymph current rather than the blood seems to be the distributing agent. Vincent reported several cases of gastro-enteritis in which large numbers of typical organisms were found post-mortem. Spillman reported a case of gangrene of the vulva and perineum; and Noguchi, a case of ulcer of the vulva.¹⁰

Modes of Infection.—It is probable that direct contact is necessary for the transmission of this disease, as it does not spread among ward patients who have no immediate contact. It undoubtedly can be conveyed by kissing, and the use in common of such articles as drinking glasses, cups, spoons, forks, handkerchiefs and towels. Lowered tissue resistance, either local or general, is probably an essential factor in permitting the organisms to become pathogenic.

PATHOLOGY.—The pathology produced is essentially the same, wherever located; consisting of a superficial or deep ulceration covered by a pseudomembrane, either yellowish or grayish white, which is closely adherent, and which, when removed (never en masse) leaves a raw, bleeding surface. The great destruction of tissue with little inflammatory reaction is usually the most striking feature.

SYMPTOMS.—While the mucous membrane of any of the upper respiratory passages and of other organs may be affected, only the mouth and fauces are attacked in the vast majority of cases. The disease is extremely variable in its manifestations and many classifications have been made. Most writers give two forms: (1) Superficial, pseudomembranous, or diphtheroid form, in which there is superficial ulceration; (2) Ulcerative form, resembling syphilis, in which there is deep tissue necrosis. Or, it may be classified as acute and chronic; or primary, involving only the tonsil, and secondary, when extending to adjacent structures. I think, however, the classification and description given by King¹⁰ more nearly fits the variable symptoms present. He classified the cases as being (1) mild acute, covering the great majority, persisting a few days to a couple of weeks; (2) severe acute; (3) chronic, with slight acute exacerbations from time to time, chronic car-

riers corresponding to better-known diphtheria carriers; (4) severe chronic cases with extensive ulcerations, great prostration and severe emaciation, running a course as long as three or four months.

Little is known of the incubation period but, judging from the time it takes to develop the cultures, it is probably long.

The condition frequently resembles an acute tonsillitis, being usually rather mild in its manifestations and not compelling the patient to be confined for any length of time. The tonsil is slightly swollen and red with a yellowish or grayish white pseudomembrane, either in patches or covering the entire tonsil. There may be a membranous deposit on the pillars or pharynx, and in quite a large number there will be found lesions on the gums resembling pyorrhea, which may have existed a long time before the throat was affected and may persist after the throat has healed. The membrane is superficial and easily removed (though not *en masse*), leaving a red, bleeding base and shallow ulceration. The fever is moderate, being, as a rule, 100 degrees or 101 degrees. It is occasionally as high as 103 degrees in adults, but is sometimes higher in children. Swallowing is more or less painful, and the cervical lymphatic glands are apt to be enlarged. Headache, myalgia and prostration are usually not prominent. The local involvement is out of all proportion to the slight constitutional symptoms. In many of these cases recovery probably takes place spontaneously in a week or ten days, but the ulceration may become deeper and spread to adjacent structures, involving at times the larynx or trachea. In this class of cases, the temperature is usually high and may persist for weeks, and there is very marked prostration, with headache and very painful deglutition. There is a peculiarly offensive and distinct odor, which may be present in the first class of patients, but in severe ulcerations it is almost unbearable. This type may last several weeks, the patient eventually recovering but occasionally succumbing, usually due to some complication. In addition to these moderate acute and severe chronic cases, there is a large group with only slight membranous formation without affecting the general health, the slight irritation causes the patient to examine his throat, thus finding a patch. These cases often run a chronic course with exacerbations from time to time. Many of the more acute forms may also die down into this mild chronic form with only a little affection of the

gums or an occasional patch in the throat. These are the throats which, due to the irritation from the presence and activity of the Vincent organisms, probably furnish ready hosts and suitable tissue for the propagation of the diphtheria bacillus. Lastly, there are few cases coming on with high fever, great prostration, much swelling of the throat and great difficulty in swallowing; resembling suppurative tonsillitis or severe diphtheria and often mistaken for it. They run a fulminating course and the mucous membrane of the cheek is often involved.

COMPLICATIONS.—The complications of this disease are numerous and diversified, and are often the cause of death. In the destructive case there may be destruction of the tonsil or palate or ulceration of the pharynx, larynx or trachea, or even necrosis of the jaw. Pyemia, broncho-pneumonia, brain abscess, hemorrhage, and exhaustion are other causes of death in this type. The cervical lymphatic glands, which are enlarged in nearly every case, rarely suppurate. Nephritis with albuminuria has been noted by many observers. Other complications which have been given are inflammation of the salivary glands, conjunctivitis, inflammation of the external auditory canal and middle ear, mastoiditis, necrosis of the lungs, pleurisy, endocarditis, myocarditis, gastro-enteritis, quinsy and purpura. Many cases of noma, stomatitis, gingivitis and balanitis are really other forms of the disease and should not be considered complications.

DIAGNOSIS.—The diagnosis of this condition is often overlooked, due, I believe, to the fact that it is not suspected. A pseudomembrane in the mouth or throat covering a superficial or deep ulcer should always be held suspicious, until an absolute diagnosis is made. It can practically always be differentiated from the other diseases resembling it by a stained smear; in some cases, dark field examination may be helpful but it is rarely necessary.

Vincent's Angina is most commonly confused with streptococcic tonsillitis, diphtheria and syphilis.

Streptococcic Tonsillitis (septic sore throat). During the first forty-eight hours there might be some question but the mild constitutional disturbance in Vincent's angina and the membranous formation should be sufficient to suggest the examination of a smear which would make the diagnosis clear.

Diphtheria.—It is likely to closely resemble diphtheria,

especially in children. Many mistakes are made because cultures only, and not smears, are examined. The Michigan State Laboratory in 1909-'10 found that out of 687 throat swabs sent in to be examined for diphtheria, 178 were not cases of diphtheria at all but proved to be Vincent's angina. The clinical diagnosis of diphtheria had been made in 224 of the 687 cases, but bacteriologic diagnosis proved only 124 were true diphtheria cases; 46 clinically diagnosed as diphtheria proved to be Vincent's angina.² Vincent's organisms may co-exist with those of diphtheria but should give rise to no confusion; on the other hand, diphtheria bacilli in any considerable number are invariably absent in lesions of Vincent's angina. The fusiform bacilli may resemble the diphtheria bacilli but they are Gram negative unless granules exist which are Gram positive.⁷ Their association with the typical spirillum would be diagnostic.

Syphilis.—These two conditions are undoubtedly often confused. Whether a positive Wassermann, in a case in which Vincent's organisms are present, means that a double infection exists, as coincident syphilitic and Vincent infections, or as the occurrence of Vincent's angina in a subject with latent syphilis;¹¹ or, if the complement fixation is of a group nature and that the Wassermann might not be specific for syphilis in these cases,¹² is a mooted question. It is a fact, however, that the two may co-exist and that intensive mercurial treatment predisposes to Vincent infection. A smear will usually clear the diagnosis for the spirillum of Vincent stains comparatively easy, has large, irregular convolutions and is associated with the fusiform bacillus. In case of any doubt the dark field examination is desirable, the spirocheta pallida is more regular and does not show as much activity. The finding of only a few spirocheta pallida would, of course, make the diagnosis of syphilis proper even if numerous Vincent's organisms were present. Fortunately the treatment for these two conditions is similar, excluding mercury, which is contraindicated in Vincent's angina.

The diagnosis of infection of the gums will not be discussed in this paper, as it belongs more to the dental than to the medical profession. It is sufficient to say that examination of smears is the important thing.

PROGNOSIS.—I believe that all cases of Vincent's angina are simple and yield to treatment readily if seen early. Cases

with severe ulceration and those resulting in death either are not seen early or are treated for some other condition. The only exceptions to this statement are patients debilitated by some other acute or chronic disease. I further believe that the reason the severe ulcerative cases do not always respond to treatment is because of secondary infection, which is always present. Death is usually the result of secondary infection, exhaustion, toxemia or starvation.

Recurrences are not uncommon and should be guarded against by prolonged local treatment, proper care of the teeth and gums and probably tonsillectomy.

PROPHYLAXIS.—The disease is probably only conveyed by direct contact, so prophylaxis consists first in isolating the patient from direct contact with other persons, which means the use of separate eating and drinking utensils, towels, bed linens, handkerchiefs, sputum boxes, etc.

The teeth and gums should be kept in the best of condition, the tooth brush used freely, and the abuse of tobacco avoided. Predisposing causes, such as exposure, and debility from any cause should, of course, be guarded against.

TREATMENT.—Of great importance is attention to the teeth and gums. All infected sinuses and pus pockets should be cleaned up, any bad teeth or roots must be removed and caps, crowns and plates should be investigated.

Local applications too numerous to mention have been used and recommended. Methylene blue, chromic acid, silver nitrate, iodine and Fowler's solution have had their advocates, but there is no doubt that the arsenic preparations are preferred, and that the best drug to employ is some form of salvarsan.

In the thirteen cases treated personally, arsено-benzol was used on the tonsils and the gums when affected. They were seen comparatively early and were rendered free of Vincent's organisms in a few days, the spirillum disappearing first.

The method of application consisted in first removing as much of the pseudomembrane as possible and then, after wetting an applicator covered with cotton, taking up as much arsено-benzol powder as possible and massaging as vigorously and long as the patient would stand, not being afraid to make two or three applications to the lesion at one sitting. This was repeated again the same day if the ulceration was deep, and if shallow, the following day. Although the organisms

were invariably absent in two or three days, the daily applications of arseno-benzol were continued until the ulcer was entirely healed, thus overcoming the tendency of recurrence.

In no case treated was the intravenous administration found necessary. However, in the cases seen late, with severe ulceration, the intravenous administration should be used in conjunction with the local treatment.¹³

SUMMARY.—I. Vincent's angina is not a rare disease by any means.

2. Lack of cleanliness, and care of the teeth and gums, unsanitary surroundings and poor general health are the most important etiologic factors.

3. Be suspicious of any pseudomembranous condition in the mouth or throat and make a smear as well as a culture, for diagnosis is usually easily made by examining the smear.

4. Early diagnosis is of paramount importance, for if seen and diagnosed early, it is usually a mild disease.

5. The local application of some form of salvarsan is undoubtedly the best treatment, but do not forget the care of the teeth and gums.

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DISCUSSION.

DR. HARRY S. WEAVER, of Philadelphia, congratulated Dr. Doebele on his paper and the thoroughness of its preparation, also in that it discussed a disease of the throat to which too scanty reference is made in literature. He, himself, had employed methylene blue in a number of these cases. He thought the Society should be congratulated on having the privilege of listening to such a thorough dissertation. Dr. Paul H. Gerhart, of Reading, reported that he had used Dr. Doebele's method in a number of cases and the patients made very prompt recovery.

EUCALYPTUS GLOBULUS WITH REFERENCE TO ITS UTILITY IN CERTAIN TYPES OF GASTRIC DISORDER.

BY

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(Read before the Homœopathic Medical Society of Pennsylvania, Sept. 21, 1920.)

AGE is purely a relative term; therefore, when I say that we shall bring to your notice some things about eucalyptus that are new, I mean, that to our own knowledge they have not been said before. And, then again, that they have not been said does not, by any means, indicate that they may not be known. For many things are known that have not yet been spoken of. We desire to start some general investigation into the merits of eucalyptus as a medicine which may be administered in certain stomach and intestinal conditions. These conditions have almost always been painful either severely so, or

in lesser degrees. I am fully aware that, not infrequently, pain in the epigastrium or in the upper abdominal regions, indicates that our case is a surgical one demanding very prompt surgical treatment; a case in which continued medical treatment would be, to say the least, a hazardous proceeding. Every medical man must keep himself thoroughly convinced of this fact. And yet, with this fact always in mind, we believe that in many instances, medicinal treatment accomplishes a great deal and perhaps occasionally saves a patient from operative procedure. And there is need for more and for better medicines than we now can command in the class of cases under consideration.

Numerous experiments were made with varying dosages of the tincture of eucalyptus in an endeavor to elicit a distinctive or characteristic symptomatology in the gastro-intestinal sphere. You will, perhaps, note the paucity of symptomatic results; but, I do not believe that we shall find it an easy matter to obtain a distinctive pathogenesis of this remedy with non-poisonous doses.

The drug, even in moderate doses, is to some degree a gastro-intestinal irritant. It seems to slow digestion. It apparently does not diminish appetite markedly. It does produce pain or distress in the stomach or in the upper abdomen. Very often this pain is attended by flatulent distention or by eructations. I could not say that the gaseous distention is the cause of the pain or distress. Very rarely burning in the stomach has been mentioned; but not in a manner suggesting severity. Occasionally vomiting has been produced, the vomited material being watery fluids having a warm, mawkish, sour taste.

The one especial peculiarity brought out is the fact that the ingestion of food does not aggravate, but rather ameliorates all the mentioned symptoms. These symptoms either return or are apt to make an appearance *several hours after food has been taken*. I believe that to be a somewhat characteristic symptom or modality upon which this remedy may be prescribed. Numerous bedside tests have been made upon the sick, using doses of one drop or more of the tincture frequently repeated. All of the cases were non-surgical in their nature. Diagnostically, they were possibly cases of gastric ulcer, hyperchlorhydria, atonic gastritis, duodenal ulceration, dilated stomach. One proved to be gastric carcinoma. In all the cases, care was taken to adjust the dietetic and adjuvant treatment, according to our diagnostic suppositions. I speak this

way because I feel that one cannot always speak precisely regarding the nature of all his stomach cases. The best of us speak with more precision subsequent to exploratory incision; although we may have spoken with apparent positiveness before.

In all the cases referred to, the beneficial effects of the eucalyptus were sufficiently distinct to warrant a belief that it may be a remedy likely to help a great many cases of stomach disorder of varied nature, and this brief mention of it has been made, with due care to avoid exaggeration, in the hope that a more extended study of it may result.

In closing the discussion, I might add that most of the illnesses in which eucalyptus has been tried, were of such duration as to justify our speaking of them as chronic cases. The remedy helped pain and variously described distress in epigastrium or upper abdomen. The return or occurrence of pain several hours after food had been taken, passed away. The tendency to flatulent accumulation disappeared. Appetite improved and digestion likewise, so that weakness and anemia were lessened. Some of the patients declared for a steady continuance of eucalyptus in preference to any other remedy. I think it will merit investigation.

DISCUSSION.

DR. TRIMBLE PRATT, of Media, said that he had had no experience with eucalyptus in stomach troubles. It impressed him, however, that the analogy between it and anacardium was a good one, for the two drugs appeared to be very similar in their actions. He, himself, had often seen good results from the latter remedy in the class of symptoms mentioned by Dr. Haines. The speaker suggested that a further study of the two drugs might show more or less similarity in other directions than in those relating strictly to the stomach.

DR. I. B. GILBERT, of Philadelphia, said that he had used eucalyptus for gastric troubles and found it most excellent for pains of the upper abdomen.

DR. O. S. HAINES, in closing the discussion added: that most of the illnesses in which eucalyptus had been tried were of such duration as to justify our speaking of them as chronic cases. The remedy relieved the pain and distress in the upper abdomen, and the return or recurrence of pain several hours after food had been taken passed away. The tendency to flatulence disappeared, and the appetite improved; so that the weakness and anemia were lessened. Some patients declared in favor of eucalyptus in preference to other remedies.

**THE INFLUENCE OF AMMONIUM CARBONATE IN URINE ON
CERTAIN TESTS.**

BY

CLIFFORD MITCHELL, M.D., CHICAGO.

WITH a view to obtaining more precise information than generally available as to the influence of ammonium carbonate and other carbonates upon our clinical urine tests the following experiments have been undertaken by the writer:

Since urine acidity is thought to be due principally to monobasic sodium phosphate, an aqueous solution of monobasic sodium phosphate, NaH_2PO_4 , was made containing 5 grammes of the salt dissolved in water to make a liter, that is, about one-half of one per cent. in strength. This solution was titrated with decinormal sodium hydroxide solution, using phenolphthalein as an indicator (one drop to 10 c.c.), and, it was found that a little less than 3 c.c. of the soda solution (about 2.8 c.c.) neutralized 10 c.c. of the acid phosphate solution. The titration was repeated three or four times with like results, different graduates being used for the different titrations. The solution was next titrated for P_2O_5 with uranium nitrate and 2.2 gm. per liter repeatedly found.

Ammonium carbonate chemically pure was then taken, the hard lumps powdered in a mortar, and added in different percentage amounts to five 100 c.c. amounts of the acid phosphate solution, so that the five contained respectively (in addition to the 0.5 per cent. phosphate) 0.2 per cent., 0.4 per cent, 0.6 per cent., 0.8 per cent. and 1 per cent. approximately of ammonium carbonate.

Each one of the five was then subjected to two determinations, first for acidity with decinormal soda as before, and next for phosphate content with uranium nitrate as before. The results were as follows: The first required 2.1 c.c. to neutralize 10 c.c. and showed a phosphate content of 2.2 in grammes per liter of phosphoric anhydride; the second required 1.8 c.c. of the soda solution, and showed a phosphate content of 2.2; the third required 1.5 c.c. of soda solution and showed a phosphate content of 2.35; the fourth required 0.4 c.c. and showed a phosphate content of 2.9; the fifth required no c.c. of soda solution, as the phenolphthalein alone gave the

end color reaction, and showed a phosphate content of 3.8 gm. per liter. In other words, the ammonium carbonate failed to cause over-titration in the determination of acidity with decinormal sodium hydroxide solution, but did cause more or less marked over-titration in the determinations of phosphate by the uranium nitrate solution, the latter over-titration being noticed in spite of the fact that marked effervescence and probable loss of ammonia was observed in every phosphate titration, due to heating on the water bath to 180 degrees F. with addition of 5 c.c. sodium acetate solution containing 30 per cent, acetic acid to every 50 c.c. of the phosphate-carbonate solution. That this over-titration did not take place in the case of each of the smaller carbonate amounts might have been due to this volatilization of ammonia.

To verify the finding that ammonium carbonate does not cause over-titration when decinormal soda is used for urine acidity determinations, a specimen of normal urine was taken of specific gravity 1020 and of acidity requiring 3.5 c.c. of soda solution to neutralize 10 c.c., with one drop of phenolphthalein. To five different samples of this urine sufficient ammonium carbonate was added to make percentage strengths approximately 0.1 per cent., 0.2 per cent., 0.4 per cent., 0.6 per cent., 1 per cent., and 2 per cent., respectively of ammonium carbonate. Every one of the samples was then titrated with decinormal sodium hydroxide solution and it was found that no over-titration took place in any case. The smaller percentages exerted no marked influence on the titration, but when the urine containing 0.6 per cent. of carbonate was titrated it required only 3.2 of the soda solution. The 1 per cent. carbonate urine required less than 1.6 c.c. of soda solution and the 2 per cent. carbonate required none at all, the phenolphthalein causing a marked red color without addition of soda solution. Hence ammonium carbonate in urine does not necessarily cause over-titration in determining acidity with decinormal sodium hydroxide. To verify the finding of over-titration when uranium nitrate is used to determine P_2O_5 in presence of ammonium carbonate, a specimen of normal urine was taken in which the phosphate content was determined to be 1.8 gm. per liter and to it 1 per cent. of ammonium carbonate was added. The phosphate titration after addition of the carbonate showed, in spite of vigorous effervescence, a figure of 4.3 gm. per liter, more than twice the real amount of

P₂O₅ present. Hence ammonium carbonate in urine causes over-titration in determinations of the phosphate content.

Further to verify these findings, samples of a number of specimens of acid urine were titrated with decinormal soda. Then these same specimens were allowed to stand in open containers in a room of temperature not less than 78 degrees for several days. The results were as follows:

Specimen No. 1, pregnant woman, 24 hour specimen, acidity equivalent to 2.5 c.c. of soda solution per 10 c.c. of urine. After standing 24 hours no change; after 48 hours no change; after 72 hours not taken; after 96 hours 1.3 c.c.; after 120 hours 0.7 c.c.

CASE 2: Female, adult, single specimen, 2.7 c.c. a few hours after voided. Next day 0.9 c.c.; third day (about 54 hours) 0.9 c.c.; fourth day, acidity none; urine reddens phenolphthalein.

CASE 3: Healthy male adult. Twenty-four hour specimen. Acidity equivalent to 2.9 c.c. soda solution; in 48 hours 2.5 c.c.; in 72 hours not taken; in 96 hours 1.1 c.c.

CASE 4: Old man with enlarged prostate. Freshly voided urine, acidity equivalent to 4.5 c.c. of soda solution; next day not taken; second day (about 54 hours) acidity none; urine reddens phenolphthalein.

Hence ammonium carbonate in urine does not cause over-titration but, on the other hand, this substance acts like sodium carbonate or other fixed alkali in lessening the titration acidity of urine.

CASE 5: Was that of a diabetic adult male. In this case the freshly voided urine showed a titration acidity equivalent to 2.5 c.c. of decinormal soda; later by 24 hours it showed an equivalent of 3 c.c.; the next day 4.4; at the end of three days after voiding 3.6 c.c. No ammonium carbonate, however, could be found in it and the increase in acidity could, therefore, not be attributed to over-titration. Three days after it was voided, although it then required 3.6 c.c. of soda solution, it was only faintly acid to blue litmus paper. Hence diabetic urine may grow more acid instead of less acid on standing so far as phenolphthalein is concerned, but on the other hand, it may appear less acid to litmus.

From the last case it will be seen that the two indicators litmus and phenolphthalein do not necessarily agree. For example, the titration acidity of a given specimen of urine

may be equivalent to 1 c.c. of decinormal soda solution and this urine be acid to litmus paper, while the titration acidity of another specimen may also be equivalent to 1 c.c. of the soda and yet be plainly alkaline to litmus paper. In the first case there is a dilute urine of low specific gravity, merely, with no alkaline carbonates present; but, in the second case, in a urine of normal specific gravity, sufficient alkaline carbonate may be present to turn red litmus blue, and yet not to affect phenolphthalein, when only 1 drop of the indicator is used per 10 c.c. of urine. The urine in most cases of simple phosphaturia (earthy phosphates) seen by the author has a measurable degree of titration acidity, when 1 drop of the phenolphthalein indicator is used per 10 c.c. of the urine. Yet such urines are seldom acid to litmus paper, being, as a rule, at least neutral or more or less alkaline.

Then again litmus and turmeric differ. Fresh milk and normal saliva are "acid," if we use turmeric, but "alkaline" if we use litmus. That is to say, fresh milk and normal saliva affect turmeric as acids do, while they affect litmus as alkalis do.

CONCLUSIONS.

1. Alkaline carbonates in urine, including even ammonium carbonate, lessen the titration acidity. Ammonium carbonate does not cause over-titration when 1 drop of phenolphthalein indicator (from a drop bottle) is used per 10 c.c. of urine.
2. Urine containing alkaline carbonates may turn blue litmus red and yet show measurable titration acidity.
3. Urine containing ammonium carbonate affects the ferrocyanide indicator (used in titrating phosphates with uranium nitrate) to a marked degree; hence the determination of P_2O_5 in such urine may be highly fallacious.
4. Whenever a specimen of urine is reported to have a titration acidity, other things are to be considered before such urine is to be accepted as clinically acid. The same is true when urine is reported acid to litmus paper.
5. In clinically deciding upon the acidity of urine, the odor, the specific gravity, and the character of the sediment are to be taken into consideration. For example, a urine of titration acidity equivalent to 1 c.c. of soda solution may be, from a clinical point of view, more acid than one of a titration acidity equivalent to 1.5 c.c. of soda solution.

INFECTIONS OF THE NEWBORN.

BY

C. SIGMUND RAUE, M.D., PHILADELPHIA.

(Read before the Meeting of the State Homœopathic Society of Pennsylvania,
Harrisburg, Sept. 22, 1920.)

IN looking for a subject worthy of presentation before the pediatric section of this Society, I have chosen the infections encountered in the newborn, which, it seems to me, do not ordinarily receive the discussion which their importance merits. The fact that the pathological conditions encountered at this time of life do not induce as clear-cut and characteristic clinical manifestations as are observed in older children, and, therefore, the difficulty of recognizing and diagnosing these conditions, accounts for their apparent neglect. In recent years, however, much new information has been gathered in the field of the diseases of the newborn and gratifying advances both in prophylaxis and treatment have resulted from this knowledge. Before dealing with the pathological conditions I will refresh your minds with a description of the normal infant and differentiate the same from the premature infant. As prematurity and congenital debility contribute so largely to infant mortality it is most important that they be recognized at once.

The normal newborn infant presents a plump, well-nourished appearance and weighs on an average about seven pounds. The body is covered with vernix caseosa, a wax-like, sebaceous secretion which protects the skin from maceration during intrauterine life. The skin is smooth and of a bright pink color; the fine lanugo hairs with which the body is covered in earlier life have almost entirely disappeared. During the first week the infant's color is usually so intensely red that we are justified in speaking of a normal "erythema" of the newborn. This may be followed by desquamation of a fine, branny character which is seen most markedly upon the extremities and occurs at the end of the first week. It is differentiated from the desquamation of congenital syphilis by the absence of thickening and infiltration of the skin and the characteristic localization in the palms of the hands and the soles of the feet.

The average length of the full-term infant is 20 inches. The circumference of the head is about 14 inches while that of the chest and abdomen is slightly less, namely, 13½ inches. It is important to bear in mind that normally the circumference of the head slightly exceeds that of the chest and abdomen until the end of the first year.

The signs of prematurity in a newborn infant are decided underweight and undersize together with certain developmental manifestations. Thus, a seven month fetus weighs only three pounds and measures 14 inches in length, beside presenting a skin which is wrinkled and covered with an extensive growth of fine lanugo hairs. The finger nails have not yet broken through the epidermis of the finger tips and in males the testicles have not yet descended into the scrotum.

At the eighth lunar month, or 32nd week of pregnancy, the fetus weighs about 3½ pounds and measures 16 inches in length. At the end of the 9th month, or 36th week, it weighs 5 pounds and measures 18 inches in length. At 40 weeks, or full-term it weighs 7 pounds and measures 20 inches in length.

The healthy newborn infant has a lusty cry while the premature infant cries with a feeble whine. The normal infant is always in action when awake, keeping its arms and legs in constant motion and moving the head from side to side. After the second week its eyes will follow a light and the infant acts as if it were interested in its surroundings. During sleep the arms are held flexed to the side of the body. The sick infant on the other hand is listless and inactive. The healthy infant has a good pink color and the texture of the skin is firm and well supplied with blood while the premature or congenitally feeble infant is pale, the skin is of thin texture and lacks the turgescence of the healthy infant.

The temperature of the healthy infant shows but slight diurnal variations. In fact, a perfectly normal infant that is being properly fed will have an almost even temperature chart which is spoken of as monothermia.

The blood at birth has a higher percentage of hemoglobin and a higher red cell count than at any other time of life. The red count may reach six and a half million cells per cubic millimeter; a few nucleated red cells can usually be found at this time of life. Blood from the umbilical cord can be used for making the Wassermann test, the results being practically the same as when blood is taken directly from the infant.

The leucocyte count is high in the newborn, about three times that of the normal. A rapid fall, due to destruction of the cells takes place so that after the fourth day the white count is approximately the same as found in all infants, namely, from eight to twelve thousand. A leucocytosis after the fourth day is, therefore, pathological. Lymphocytes are the predominating cells during infancy representing over one-half of the cells in a differential count.

Septic infection of the newborn presents a good example of the atypical clinical course which a well defined pathological condition may present. The newborn is especially susceptible to infections; in fact, organisms which in older children and in adults rarely produce more than local lesions may set up a general sepsis in the newborn. Thus, a staphylococcus infection of the scalp may result in a general septicemia with arthritis and other clinical evidences of general infection. Gonococcal infection of the eyes may be followed by multiple joint infections accompanied by suppuration. Infection of the umbilicus frequently terminates in septic peritonitis.

The symptoms of a septic infection are not characteristic as to the seat of the affection but rather general in nature. Fever, developing at the end of the first week or later; vomiting and diarrhoea; distended abdomen; rapid respirations and cyanosis—these are the symptoms pointing to such a complaint. Local manifestations, such as redness of the skin about the umbilicus, protusion of the umbilicus and dilated epigastric veins, may be demonstrable and confirmatory of an infection.

Fever in the newborn is always a serious symptom contrary to the belief that febrile disturbances in a baby are of no particular significance. Sometimes the fever and abdominal distention yield to a dose of castor oil and we are then dealing with an intestinal toxemia as Morse has pointed out. There is, however, no way in which we can determine a priori whether such symptoms are toxic or septic. A leucocyte count will often help. The newborn reacts to infections with a leucocytosis like an older child.

Inanition fever should not be mistaken for an infectious fever. It develops early in the first week, usually on the third or fourth day and is unaccompanied by evidence of either a gastrointestinal or pulmonary disturbance. The fever promptly subsides when the infant is given sufficient water and food.

The chief pathological manifestations of sepsis in the newborn are omphalitis, peritonitis, pneumonia, meningitis, gastroenteritis and arthritis. Pneumonia may be primary resulting from direct infection of the respiratory tract or it may develop as part of a general infection. Physical signs are usually inconclusive; rapid respirations and cyanosis observed in association with other symptoms of sepsis point to involvement of the lungs.

Enteritis likewise may develop from direct infection of the alimentary tract. Diarrhoea and vomiting, however, are common symptoms observed in cases of sepsis. The mucosa of the newborn is more readily invaded by septic organisms than that of an older child and these organisms readily penetrate the mucosa and gain entrance into the general circulation. For this reason a primary infection of the gastrointestinal tract frequently results in a general infection. Blood is usually found in the vomitus and in the stools making it necessary to differentiate this condition from melena neonatorum, or hemorrhagic disease of the newborn.

Melena neonatorum is a condition in which spontaneous hemorrhage from the mucosa of the alimentary tract is observed. The hemorrhages usually occur during the first week of life and may come from the mouth, stomach or intestines. It runs an afebrile course and manifestations of sepsis are lacking. Evidence of syphilis is lacking in the majority of cases, although the hemorrhagic diathesis is observed in many infants who show unmistakable signs of syphilis. Melena is not a manifestation of hemophilia as is sometimes inferred. The prognosis of melena is grave unless promptly diagnosed and immediately treated by blood transfusion.

Pemphigus neonatorum is characterized by the development of bullae of varying size filled with a turbid liquid which appear upon the body surface several days after birth and tend to spread rapidly. There is but slight inflammatory reaction about the lesions and they do not attack by predilection the soles of the feet and palms of the hands like syphilis, nor are they present at the time of birth as syphilitic lesions are likely to be.

Pemphigus neonatorum represents a characteristic reaction of the delicate skin of the newborn to a staphylococcus infection; in older children such an infection results in impetigo contagiosa.

Dermatitis exfoliativa of von Ritter is a rare skin affection encountered in early infancy which must be differentiated from pemphigus neonatorum. The disease begins as an erythematous infiltration of the skin of the face associated with the development of numerous small vesicles and first shows about the mouth. It rapidly spreads to other parts of the face and eventually involves the greater portion of the body. The erythematous areas become oedematous, the epidermis loosens from the underlying inflamed corium and becomes freely movable in the affected areas. If the epidermis is removed a reddened, oozing surface is exposed. The skin about the mouth presents a characteristic appearance; it is infiltrated, of a deep red color and marked with deep fissures. The process is too acute and characteristic to be confused with syphilis. The prognosis is grave, the mortality rate being about 50 per cent.

VINCENT'S ANGINA.

BY

R. C. COOPER, PITTSBURGH, PA.

(Read before the Homœopathic Medical Society of Allegheny County. Jan., 1920.)

THE title of this paper is a misnomer, since the pathological organisms causing this disease in the throat produce similar infections elsewhere in the body. In Europe, before the war, it was called Angina Plant-Vincenti because these two men described it about the same time. During the war it became so frequent that it received the name of trench mouth.

The disease is produced by a symbiosis of a spirillum and a fusiform bacillus; other germs often present are streptococci, pneumococci, and staphylococci. The first description of these organisms dates back about twenty-seven years, and a case was reported in America some eighteen years ago by Meyer, of New York. It is most frequent in those debilitated by other diseases, and in the throat is often preceded by dental caries, pyorrhoea alveolaris, syphilis, etc.

The most common type of Vincent's Angina is that beginning on the tonsil, usually near the superior pole or at the base near the anterior pillar, as a small ulcer covered by a greyish membrane. This is at first, in all cases I have seen

personally, on one tonsil only; but later one finds other small spots, more shallow in character, elsewhere on the tonsil and posterior pillar, on the pharyngeus lateral muscle, the posterior pharyngeal wall, and sometimes on the other tonsil.

The original ulcer excavates rather rapidly, so that in a few days there may be a hole the size of a pea in the tonsil substance. If the ulcer begins near the pillar margin, it just as readily destroys the muscle tissue, and may extend over the soft palate to the uvula.

One can readily see that in the beginning such a condition might be confused with diphtheria, and in the later stage with syphilis of the tertiary stage or even the second stage. It is difficult, clinically, to differentiate Vincent's and diphtheria in the first stage, but certain points should be considered.

Vincent's is more sluggish in development, produces a deeper ulceration at the initial seat of invasion, causes fouler odor to the breath, soon one finds other spots affected, and the source of contagion is rarely traceable. Symptomatically, in the beginning the two diseases may be impossible to differentiate. The differential diagnosis is definitely established in a few minutes by a smear under the microscope, also a bacteriological culture will prove negative to diphtheria.

Syphilis of the throat may co-exist with Vincent's. The mucus plaque begins as an erythematous patch, slightly raised from the surrounding tissue, has a slight red ring about it, is irregular in outline and soon presents a superficial ulceration. It occurs more often on the uvula, soft palate and pillars, rarely on the post-pharyngeal wall. A history of the copery rash may be obtained, also these plaques are usually bilateral, and not generally unilateral as is more often the case in manifestations of Vincent's Angina.

Tertiary syphilitic conditions in the throat present usually, first, a gummatous infiltration, *i. e.*, a swollen, bright red area, most often situated on the soft palate, pillars and nasopharynx, and least often on the tonsils, although the latter usually are infiltrated and, therefore, enlarged. The gumma has a boggy feeling when touched with a probe, and eventually breaks down into a deep ulcerative process with thick margins and a wide area of dusky red tissue.

Only in exceptional cases would Vincent's approach the picture presented by tertiary syphilis of the throat, the tonsil being the common point of origin for the one and the soft palate for the other.

Syphilis having less marked glandular involvement in the tertiary stage, and being extremely slow in development as compared to Vincent's, the ulcer in the latter being quickly formed, while in the former the tissue breaks down very slowly.

Finally, when one is in doubt, a smear should be made for Vincent's organisms, and likewise a Wassermann test. A simple case of Vincent's will only last a few days, but occasionally they drift into chronic sluggish types affecting chiefly the tonsil crypts, and evidently the surface is reinfectd from time to time; but a good many cases are reported in medical literature where there has been marked destruction of all the soft tissues of the throat and larynx, with enormous glandular enlargement and finally death. This type of case is usually a neglected or mistreated one, and always necessitates a Wassermann test to affirm a diagnosis. Such a case naturally presupposes a debilitated subject. Malignancy, too, must be considered and excluded.

Complications of Vincent's include inflammation of the external auditory canal, middle ear and mastoid, nephritis, endocarditis and, in fact, most anything.

I have seen quite a good many cases of this disease, all of the simple type, except two, which I should like to report to you briefly:

Mrs. O. consulted me in February, 1919, about her throat, with the following history: Three weeks before, a small spot appeared on the left tonsil, and since that time has grown larger, pain on swallowing, some enlargement of the glands of the neck, and disturbed digestion.

On examination I found a well marked ulcer the size of a split pea, with some other small superficial ulcers on both tonsils and on the posterior pharyngeal wall. A smear examined by Dr. Wurtz proved to be Vincent's Angina. Treatment over a period of weeks proving unavailing, I performed a tonsillectomy with prompt cure.

CASE NO. 2.—Mr. T., about December 1st, 1910, consulted his family physician about a throat condition which was promptly diagnosed as Vincent's Angina. The patient presented a marked pyorrhoea alveolaris which had preceded the throat trouble.

The condition was almost entirely confined to the tonsils; the right tonsil contained a small amount of liquid pus. Well-

directed treatment failed to produce any improvement, a distressing symptom being morning vomiting. The patient was referred to me in consultation, a tonsillectomy done with prompt eradication of the Vincent's infection, cessation of the morning vomiting, and improvement of the pyorrhoea.

I report these two cases particularly because I have been unable to find in literature this method of treatment in obstinate cases. Many methods of treatment are advocated, such as biborate of soda, methyleine blue in alcohol, salvarsan powder locally, salvarsan intravenously, iodine, various gargles, etc. My treatment is a thorough daily cleansing of the surface with peroxide of hydrogen, followed by a vigorous drying with cotton, then the application of a 10 per cent. silver nitrate solution. Internally, many remedies may be indicated, of which kali bichromicum heads the list.

In closing I want to emphasize to you the value and necessity of having laboratory tests made in these cases. Clinical differentiation is often difficult, and it is our duty to employ every method to insure correct diagnosis and the best interests of the patient.

TREATMENT OF GONORRHEAL PROSTATITIS BY INTRAPROSTATIC INJECTIONS.—J. J. Valentine narrates his results with methyl phenol serum and normal phenol serum in gonorrheal prostatitis. The first contained phenol four per cent and methylene blue and horse serum prepared for intravenous use. The second contained phenol four per cent and horse serum intended for local use in the prostate. He states that whatever the effects of this medication within the human body, when injected intravenously or within the prostate, whether by virtue of its antiseptic power and serum value in establishing increased resistance, is not definitely known. We do know that the use of the sera produces no toxicity, that vicious infections are rendered benign, that the length of time of treatment is reduced, and that prostatic infections in the majority of cases are promptly controlled by intraprostatic injection.

As a rule the patient tolerates a dose of 10 c. c. of serum intravenously every forty-eight hours without any systemic reaction. After about three or four injections an improvement is noted. All painful symptoms are usually ameliorated and if local complications exist such as chordee, epididymitis or peri-urethral infiltrations, they become decidedly improved and gradually disappear without any local treatment.

The intra-prostatic injection is apparently devoid of danger (no untoward effect in 256 cases). Reactions following intraprostatic injections may be designated as mild, medium, or strong. The prompt progressive relief of those severe, painful and at times alarming symptoms that accompany acute suppurative inflammations of the gland compensates for any reaction that may be observed.—*International Journal of Surgery.*

GLEANINGS

MEDICINE

Conducted by CLARENCE BARTLETT, M. D.

ILEAL REGURGITATION, NERVES AND DIET IN THE CHRONIC INTESTINAL INVALID.—Ileal regurgitation has long been recognized by the X-rayist. Clinically, very little importance has been attached to it. Bryant of Boston now comes forward with a most interesting and convincing article showing that too little attention is being devoted to this subject, that it is a pathological condition which is a fact and not a theory. He furthermore demonstrates that the condition may be diagnosed during life with easy certainty; that it is of remarkable frequency in the class of cases referred to as chronic intestinal invalids: that it is almost constantly found in intestinal invalids exhibiting nervous irritability. He finishes his article by outlining a course of non-surgical treatment which has given him a reasonable degree of satisfaction. Bryant opens the discussion of the clinical diagnosis of ileal regurgitation by describing Hertz's sign: (a) "One hand is pressed deep across the middle of the ascending colon to block possible distal expulsion of gas in the cecum. Downward pressure with the other hand in the direction of the pole of the cecum will then, if regurgitation exists, result in course crepitation and perhaps a gurgling noise as the cecal gas is forced back into the ileum."

(b) Gas is not usually present in the small intestine. The presence of generalized gas throughout the abdomen suggests a deficient ileocecal mechanism.

(c) A cecum and ascending colon dilated with gas combined with a spastic descending colon frequently accompany ileal regurgitation.

(d) In the presence of this condition the hepatic flexure and the sigmoid loop are frequently distended by gas.

(e) A generalized yellowish discoloration of the skin, especially in the distribution areas affected by Addison's disease, is usual.

(f) The eye sign is positive. By the eye sign is indicated a marked dirty discoloration of both eye sockets. This discoloration is not like other more or less limited discolorations about the eyes with which the writer is familiar. This sign is suggestive, not pathognomonic. It is practically always present, varying in degree with the intensity and duration of the ileal regurgitation. It may be present in the absence of such regurgitation. Should this be the case, however, treatment, as for ileal regurgitation, will cause a gradual disappearance of the sign in the same manner, but more rapidly than is the case when ileal regurgitation has been demonstrated to exist.

(g) The usual complaints of the patient with ileal regurgitation are abdominal pain of various sorts, intestinal gas, constipation and nerves. After all, the roentgen examination is the absolute sign.

Ileal regurgitation is found by roentgenologists in from 20 to 30 per

cent. of a series of gastro-intestinal cases. The treatment proposed by the author consists in a diet that reduces putrefaction to a minimum and accordingly a regimen from which meats, fish and eggs are rigidly excluded is put in force for a month or two. No attempt is made to give the patient a definite menu, but rather to permit him to follow his own tastes in order to secure a maximum of nutriment. Rest, of course, is enforced according to indication. Following the period of abstinence from meats the patient shows diminished constipation, lessened irritability, diminished flatulence, better appetite and fewer headaches. Meat, then, is restored to the diet, at first but once a week, later more frequently, as improvement continues. In addition to the diet, the author makes use of mineral oil, agar, yeast and atropia. Occasional endocrine treatment is advised according to indication. The line of treatment has developed wonderful improvement in 86 per cent. of a series of 50 cases.—*Amer. Jour of Med. Sciences*, December, 1920.

TREATMENT OF PULMONARY GANGRENE.—Rathery and Bordet (*Bull. et Mem. Soc. Soc. Med. des Hôp de Paris*, July 1, 1920), record a case of pulmonary gangrene in a man aged 61 successfully treated by intra-tracheal, intravenous and intramuscular injections of anti-gangrene and anti-streptococcal serum. The anti-gangrene serum consisted of a mixture of anti-perfringens, anti-vibrio septique, anti-oedematiens, and anti-histolytica serums.—*British Medical Journal*, Dec. 4th, 1920.

ORAL AUSCULTATION IN ARTIFICIAL PNEUMOTHORAX.—Borelli (*Il Policlino, Sez. Prat.*, July 26th, 1920) emphasized the importance of oral auscultation, which was introduced by Galvagni in 1875, in determining the condition of artificial pneumothorax. The object of oral auscultation, which is performed by approximating the ear or the chest-piece of a binaural stethoscope to the patient's mouth, is to detect the sounds produced in the lung while he breathes exclusively through the mouth. The importance of oral auscultation lies in the fact that râles are sometimes heard by this method when examination of the chest is almost entirely negative. Most authors are agreed that oral auscultation is peculiarly useful in pulmonary tuberculosis, especially in the period of cavity formation, and that oral râles are less commonly heard in other diseases of the chest, such as pneumonia and capillary bronchitis. The value of oral auscultation in artificial pneumothorax consists in the fact that during the treatment the râles may appear or disappear, according as the pneumothorax is or is not complete and the lung is or is not in a state of absolute respiratory inactivity. On the appearance of the first signs of resumption of activity in the lung under treatment an immediate "refill" is indicated.—*The British Medical Journal*, Dec. 4th, 1920.

THE ENDOCRINES IN GASTRIC DISEASE.—Schnabel, from an analysis of 350 cases of gastro-intestinal disease in the University of Pennsylvania out patient department, studied from an endocrine standpoint leads him to the following conclusions: "(1) With dysfunction of the ductless glands there is sometimes found dysfunction and pathology in the stomach. (2) The relationship of the ductless glands to the stomach by way of the anatomic system has some evidence in its favor from an experimental

and clinical standpoint. Perhaps internal secretions influence the stomach directly. (3) The influence of some center in the central nervous system as a regulator of the vegetative system is still to be considered. (4) Fatigue seems to be a factor in gastric disease. (5) A relatively small percentage of stomach cases show endocrine disturbances as found in those coming to a gastro-intestinal clinic over a period of time. (6) Organotherapy should be tried, either alone or in combination with other agencies, in gastric disease especially of a functional type; it may be followed by some success in a small number of cases."—*Pennsylvania Medical Journal*, January, 1921.

CHRONIC GASTRITIS.—In the course of a summary of his studies concerning chronic gastritis, Rehfuss divides cases of this so-called disease into the following types: "A. Gastritis due to dietary indiscretion: Ingestion of irritants, excessive ingestion of food, irregular eating, unbalanced dietary. B. Gastritis due to medicaments: Purges, (salines and drastic) salicylates, iodides, mercury, opiates, iron, copaiba, santal wood oil, etc. C. Gastritis due to organic disease elsewhere: (a) Cardiac decompensation. (b) Pulmonary, t.b., bronchitis, bronchiectasia. (c) Nephritis, nitrogen and salt retention. (d) Hepat, cirrhosis with portal hypertension. (e) Intestinal infections, reversed peristalsis, inflammation. (f) Blood anemias, chlorosis, systemic disease. D. Gastritis due to direct infection of the stomach wall: (a) Direct infection. (b) Hematogenous. E. Gastritis due to specific irritants: Alcohol, tobacco. F. Gastritis due to or accompanying organic disease of the stomach: (a) Cancer, syphilis.

Under rubric 14, he furthermore says: "It is absurd to expect an inflammation of the stomach due to the swallowing of ingested muco-pus and bacteria to clear up under a bland diet; it is equally absurd to expect the chronic gastritis associated with cardiorenal disease to clear up under local treatment, and finally it is likewise absurd to expect gastric treatment to produce results in the presence of manifest focal infection elsewhere in the body."—*The Pennsylvania Medical Journal*, January, 1921.

LEFT RECURRENT LARYNGEAL PARALYSIS IN MITRAL STENOSIS.—Among the less familiar signs of mitral stenosis are two closely associated with the enlargement of the left auricle—namely, compression of and resulting stridor over the left bronchus, which must be looked for to be detected, and paralysis of the left recurrent laryngeal nerve, which may become obvious from alterations in the voice. The occurrence of paralysis of the left recurrent laryngeal nerve in association with mitral stenosis was first reported by Ortner in 1897, and in a recent paper on the subject Garland and White have collected 61 recorded cases, and in addition tabulate nine cases detected during eight years at the Massachusetts General Hospital, Boston. It is probably, like many other unobtrusive signs, more frequent than is generally recognized. There are at least two points of interest about it: in the first place, the diagnosis from other causes of paralysis of the left recurrent laryngeal nerve, such as an aneurysm, often a small or even a latent one, of the aorta near the entrance of the ductus arteriosus, enlarged tracheo-bronchial glands, carcinoma of the oesophagus, syphilitic mediastinitis, and infective and toxic neuritis of the left inferior laryngeal nerve, must be considered, and for this distinction skiagraphy is, of course,

invaluable. In the second place, the mechanism by which the paralysis is brought about has given rise to some discussion; the obvious and, therefore, general explanation that the dilated left auricle exerts direct pressure on the nerve which is thus destroyed has been controverted by Fetterolf and Norris, who argue that the nerve is squeezed between the left branch of the pulmonary artery and either the aorta or the ductus arteriosus, and that a pressure neuritis, not destruction, is produced. Garland and White accept this interpretation, and also agree with Lian and Marcorelles that mediastinitis or the formation of a thrombus in the left auricle or its appendix may occasionally be responsible. Auricular fibrillation, which was present in four out of their nine cases, is also regarded as an important factor, both because the auricle is thus permanently ballooned out and because thrombosis readily occurs in a fibrillating auricle.—*The British Medical Journal*, Dec. 18th, 1920.

CONDITIONS COMMONLY MISTAKEN FOR PULMONARY TUBERCULOSIS.—Stivelman of the Montefiore Sanatorium discusses this question on a basis of 1700 consecutive cases studied, and presents the following as his summary:

"1. Among the last 1700 cases sent to us suffering from tuberculosis, 176, or 10.4 per cent., were non-tuberculous.

"2. The conditions most frequently diagnosed incorrectly were: Chronic bronchitis and emphysema, cardiac conditions, non-specific diseases of the upper respiratory tract, neurasthenia, chronic interstitial pneumonia, bronchiectasis, chronic non-tuberculous lung infections, asthma, gastric ulcer, pulmonary abscess, dysthyroidism.

"3. It is hazardous to diagnose tuberculosis in individuals over fifty and those suffering from mitral disease, unless sputum or X-rays are positive.

"4. It is safe to consider lesions confined to the lower lobe as non-tuberculous until proved otherwise.

"5. Marital phthisis is exceedingly rare. Tuberculosis in one consort has no definite etiological relation to phthisis in the other.

"6. Extensive unilateral lesions are often non-tuberculous, while advanced phthisis is usually bilateral.

"7. Positive sputum reports are not incontestable. When the diagnosis rests on the presence of acid-fat bacilli in the sputum, the findings must be confirmed.

"8. Care and thoroughness, sputum studies, free use of the roentgen ray, and, above all, the proper correlation of history, symptoms and physical findings, will make for more accurate diagnosis and more intelligent treatment."—*American Review of Tuberculosis*, January, 1921.

CAMPHOR IN HEMOPTYSIS.—Hemoptysis are of two kinds: (1) those due to a damming up of the blood, and (2) those due to the rupture of a vessel. In the first, the bleeding comes on slowly and with little froth. The blood is usually dark brown. The cause is a circulatory insufficiency of cardiac or vasomotor origin. In the second, the bleeding comes on rapidly and with much froth. The blood is usually red. Camphor in small doses stimulates the heart and mildly the vasomotor centre. The pulse volume is increased and there is a larger variation between systolic

and diastolic pressure. This insures a better flow of blood through the lungs. In large doses camphor causes a dilatation of the peripheral vessels with an increased blood supply and by its action on the vasoconstrictor centre causes constriction at the seat of injury, thereby inviting local thrombosis. Aside from its principal mechanical action camphor secondarily produces an increase in the thrombokinasase flowing to the part.—*American Review of Tuberculosis*, Abstract Department, January, 1921.

PATHOLOGY

Conducted by JOHN G. WUETZ, M. D.

PROPHYLACTIC INOCULATION AGAINST YELLOW FEVER.—Noguchi and Pareja (*Jour. Amer. Med. Asso.*, Jan. 8, 1921, p. 96), apparently have succeeded in vaccinating humans against yellow fever. After favorable results in this line of experiments in animals, the workers injected a suspension of the dead organisms into humans. The ill effects were nil and the immunity definite, as shown by immunity reactions. Vaccination of groups of soldiers seemed to inhibit the occurrence of the disease in a locality where it is almost endemic.

THE FAILURE OF ANTIBODY FORMATION IN LEUKEMIA.—Howell (*Arch. Inter. Med.*, December, 1920, p. 706), reviews the observations of others that bacterial antibodies, particularly those against typhoid, are either not formed or lessened in the leukemias. The failure to produce agglutinins was observed in leukemics injected with typhoid vaccines. This failure of antibody formation may explain the occurrence of terminal infections in those ill with leukemia, because the tissues of such patients have lost the property of antibody formation in general. This loss is probably the result of the marked alteration of the hematopoietic tissues.

METABOLISM IN TUBERCULOSIS.—Calorimetric studies of the metabolism of tuberculosis were made by McCann and Barr (*Arch. Inter. Med.*, December, 1920, p. 663), with results that may, to a degree, revolutionize our attitude toward phthisis. The authors summarize as follows: "The basal metabolism of tuberculosis patients may be normal or very slightly above that of normal men of the same size." Further increases in metabolism occur with a rise of body temperature. These increases are not large." "The basal heat production in tuberculosis may be less than normal for the same patient when in health; in other words, the loss in weight may be accompanied by reduction in metabolism which more than compensates for the tendency to increase caused by the disease." "Limited data regarding the nitrogen excretion show that, while a toxic destruction of protein does exist in tuberculosis, it is not large." The investigators conclude that "In view of the fact that the food requirements of tuberculosis patients are not large, either as regards total energy value or nitrogen content, forced feeding is unnecessary and is probably harmful in the active stages of pulmonary disease. Since protein increases the respiratory exchange in tuberculosis as normally, it may be well to limit the protein intake during periods of activity (of the disease) in order to put the lungs at rest."

RELATION OF CONTACT WITH TUBERCLE BACILLUS TO DEVELOPMENT OF TUBERCULOSIS IN ADULTS.—Rogers (*Jour. Amer. Med. Asso.*, Dec. 18, 1920,

p. 1690), as a result of experiments found that such objects as gauze used to cover the mouth when coughing, pillow cases used twenty-four hours, patients' hands, spoons, magazine covers picked up from the wards, and door-knobs frequently handled by patients are contaminated with living virulent tubercle bacilli. In spite of these findings the writer comments that his observations correspond to those of other investigators, in so much as physicians, nurses and other attendants caring for patients with open-tuberculosis in institutions do not develop the disease more than the population at large. While at necropsy findings tuberculous affections are virtually universal; still less than 3 per cent of the people develop clinical tuberculosis. This proves that factors other than tubercle bacilli are important in relation to the disease or its absence.

DERMATOLOGY

Conducted by RALPH BERNSTEIN, M.D.

ORGANOTHERAPY IN SKIN DISEASE.—Deductions made by Pulay in connection with the relations between skin diseases and the sexual glands are that there is no evidence of any direct connection between disturbances in the genital sphere and abnormal conditions in the skin with the exception of certain anomalies in the growth of the hair. As an example, he cites the falling out of the hair occasionally noted with uterine fibromyomas and the rapid growing in of the hair again after these tumors have been removed; also the subsidence of seborrhoea during a pregnancy. On the other hand, he claims mineral metabolism has undoubtedly something to do with skin diseases. Pulay also refers to pityriasis rosea at the menopause as an instance of a skin disease in which changes in the genital sphere are certainly an indirect factor, to some extent at least.—*Jour. Amer. Med. Assoc.*

RADIUM TREATMENT OF ROENTGEN-RAY DERMATITIS.—Three cases are reported by Degrais and Bellot in which radiologists were cured by Curie-therapy of professional epitheliomatous radiodermatitis. Their first patient was an American physician who had been using the roentgen-ray since 1903 and an epithelioma had developed first on two fingers. These lesions had been cut out time after time. The third recurrence on the ring finger refused to heal, and the back of the hand showed hyperkeratosis, and there were violent pains. The reaction to exposure to twenty-seven filtered millicuries for twelve hours was soon followed by the complete retrogression of the lesions, and the cure was apparently complete when the patient was examined six months later. The pain subsided as the skin returned to normal.—*Presse Medicale, Paris.*

PURPURA WITH MENINGOCOCCEMIA.—Evidence presented by Renault and Cain tends to show that purpura is a manifestation of septicemia, and that the diagnosis can be made by cultivating the serous fluid from the purpuric lesion or by histologic examination of a scrap of tissue from it.—*Journ. Amer. Med. Assoc.*

COMMON ORIGIN OF CHICKENPOX AND OF SOME CASES OF HERPES ZOSTER.—A. Netter reports two instances in which a case of herpes zoster

was manifestly secondary to one of chickenpox and itself manifestly gave rise to another case of the latter disease. In the first instance the child who had herpes zoster had been in a hospital for forty-three days, but had been transferred to a ward in which chickenpox had prevailed for nearly two months, just thirteen days before the herpes zoster 'came on. In the second instance a child contracted herpes zoster ten days after being transferred to a hospital from a boarding school in which there had been an epidemic of chickenpox. Fifteen days later, another child, who had been in this hospital seventy-nine days with lethargic encephalitis, contracted chickenpox. Feer recently reported a similar instance from a hospital in Zurich. Netter reviews other cases in the literature, illustrating a relationship of chickenpox to some cases of herpes zoster, and concludes that in these cases of herpes zoster the eruption arose through the localized action of the chickenpox virus upon the corresponding intervertebral ganglia. Sixteen cases of chickenpox closely following herpes zoster in the same person have been reported. The small number of persons contracting chickenpox from cases of herpes zoster is to be ascribed to the fact that a large proportion of individuals before exposure have already been immunized by a previous attack of chickenpox. The possibility should be borne in mind that a case of herpes zoster may be followed by the appearance of chickenpox in the same ward or family.—*Bulletin de l'Académie de Médecine*.

TINEA TONSURANS.—As a preliminary step in the treatment of ring-worm of the scalp, W. P. Elford advises shaving the affected area and cleansing with liquid ethereal soap. The part is then gently and carefully rubbed with a piece of lint which has been dipped in liquor potassae and dried with a piece of cotton-wool. Next the part is sprayed with ethyl chloride for about thirty seconds and allowed to dry; it is then painted with tr. iodid mitis. This procedure, omitting the ethereal soap, should be carried out morning and evening for three days and once daily during the subsequent four or five days.—*British Medical Journal*.

CAMPAIGN AGAINST CANCER.—Greenough, of Boston, believes that the cancer situation at present is a very serious one which demands the best effort of the whole medical profession toward its relief. The first step, of course, is the education of the public to the dangers of delay and the recognition of the early symptoms of cancer. Physicians must teach that the so-called precancerous diseases justify and demand treatment in the prophylaxis of cancer, and, finally, they must support in every possible way, the investigations which are being carried on in hospitals and in laboratories all over the world to improve the effectiveness of methods of treatment of cancer.—*Jour. Amer. Med. Assn.*

ORIGIN OF CANCER.—Cancer, according to Paine's opinion, is not a specific disease due to the activities of a special parasite, but a disordered growth of epithelium caused by various physical or chemical irritants, the most important being the toxins of micro-organisms. He considers that the origin of cancer lies in the degeneration of the nobler parts of the cell consequent on damage of its structure. The result of this damage is to disturb the balance of metabolism by impairing the special functions of the cell, and thereby causing persistent overgrowth.—*Jour. Amer. Med. Assoc.*

UROLOGY

Conducted by Leon T. Ashcraft, M. D.

TREATMENT OF A CASE OF HEREDITARY SYPHILIS WITH SUPPOSITORIES OF NOVARSENO BENZOL.—Melon (*Gazette des Hopitaux*), treated a case of hereditary syphilis with .10 gram doses in cocoa-butter suppositories after trying other methods in an infant. The history in this case showed that the mother had six previous pregnancies of which none had arrived at term. The fifth fetus was dead and macerated and the sixth child died after eighteen months. The repeated abortions and sudden death of the sixth child led to the diagnosis of syphilis in the parents, and the examination of the infant which was about three months old confirmed the diagnosis. There were gastro-enteric disorders, frequent regurgitations and green diarrhea unrelieved by doses of lactic acid. The lower limbs showed pemphigus, and there were numerous patches around the anus, alopecia in a band (described by Parrott), very pronounced pericranial venous circulation indicating intra-cranial pressure. Mercurial inunction caused the disappearance of the pemphigus and of the various bands. Hypodermic injections of biniodid of mercury were not tolerated. Van Swieten's liquid was given *per os*, but the cries of the child made the lives of the family miserable. Intravenous injections were impracticable on account of the tender age of the child. Enemata were not retained. Suppositories were tried at eight days apart with perfect results after the second suppository. Improvement of the general health, increase in weight, hair growth, disappearance of venous congestion of the head, and crying at night ceased.—*The Urologic and Cutaneous Review*, Vol. xxv, No. 1.

THE THERAPY OF SYPHILITIC DISEASE OF THE CENTRAL NERVOUS SYSTEM.—Heinrich Schmidt (*Munchener Medizinische Wochenschrift*), sums up his experience extending over fourteen years embracing ninety-four cases of syphilis of the central nervous system. Tabes existed in forty-seven cases, paralysis in fourteen, cerebro-spinal lues in thirty-three. The treatment of tabes and paralysis consisted in the administration of Ricord's liquid, which is a mixture of 0.1 to .2 iodid of mercury, 10 iodid of potassium, and 300 water; dose one tablespoonful t.i.d., combined with salvarsan in doses of 0.1 gram, or neosalvarsan in doses of 0.15 till 1.5 or at most 2 grams were given in all. In cerebro-spinal lues the doses were the same, but for the most part over two grams, and in some cases three grams were given. In some cases mercury was injected and given by inunction. The results showed in uncomplicated paralysis only transitory improvement. In tabic paralysis some cases showed permanent improvement with partial disappearance of physical symptoms. Improvement in psychic symptoms was not seen in any case. There was slight improvement only in patients with hereditary syphilis. In purely spinal involvement good results were obtained in the early cases where there was pain, and where the paresis was but little developed. Results with the combined Ricord-Salvarsan treatment were not appreciably better than with the Ricord alone. Although no very extraordinary results were obtained in the treatment of these cases, nevertheless they should encourage anti-syphilitic treatment as early as possible at intervals of three or six months.—*The Urologic and Cutaneous Review*, Vol. xxv, No. 1.

CHRONIC COMPLICATIONS OF GONORRHEA.—Reinle and De Puy (*American Journal of Surgery*), estimate that 18.75 per cent., or approximately one-fifth, of all adult males are suffering from prolonged after-effects of an old gonorrhea, with symptoms ranging from slight discomfort to actual distress. One-fifth of the male population is a large number and though their ailments may not be to the average medical man's mind severe or even worthy of sympathy, these patients will not and cannot be dismissed with the mere assurance that there is nothing the matter with them. Smears and urinary examinations may not show gonococci, nor should much reliance be placed upon this; the absence of organisms means nothing at all. When an individual experiences urethral distress of any sort, when he has a "morning drop," moisture of the urethra, or when he has uncomfortable rectal sensations, one may be assured that there is a definite disease back of it. Of the common chronic conditions affecting the urethra there are: Stricture, soft infiltration, granulation, folliculitis: posteriorly there may be present folliculitis; changes in the mountain spaces; prostatitis; vesiculitis. Of the chronic after-effects of gonorrhea the most common and most difficult to cure is prostatitis. Treatment requires massage, dilatation and instillation for months, sometimes years. There is only one way patients will submit to such prolonged treatment and that is where they are treated in numbers, where they meet each other in a waiting room and where they are aware of the persistence of many undergoing the same course. They take courage from one another, an encouragement not to be had in any other way. The practically incurable cases experience a sense of "well being" by regular emptying of their diseased prostates which otherwise they cannot have; many of their neurasthenic symptoms leave them and they more nearly approach the normal than when they forego their treatment. Seminal vesiculitis more commonly than not, goes unrecognized and is frequently diagnosed prostatitis, with the result that a quiet inoffensive prostate is massaged with no consequent relief. The cure of seminal vesiculitis is at best difficult. Sometimes it yields to stripping and instillations. The operation of choice is vasostomy and instillation of the vesicle with an antiseptic. Vasostomy certainly gives immediate relief in the epididymitis consequent upon a vesiculitis and its results are such as to make it well worthy of consideration in every stubborn case.—*The Urologic and Cutaneous Review*, Vol. xxv, No. 1.

PEDIATRICS

Conducted by C. SIGMUND RAUE, M.D.

THE ULCERATED MEATUS IN THE CIRCUMCISED CHILD.—Joseph Brenemann, M.D., Chicago, makes the following comments on this condition: An ulcerated meatus in the circumcised child is a frequent symptom and the "ammoniacal diaper" is the cause of this lesion. The etiology of this includes: a dietetic error that increases the ammonium or urea content of the urine, and the presence of an alkali or of certain bacteria in the diaper. The treatment consists in applying thickly some substance like petrolatum together with wet boric acid dressings and correcting, if possible, the dietetic error and in thorough rinsing and boiling of the diapers, night clothes and bedding.—*American Journal of Diseases of Children*, January, 1921.

A STUDY OF TUBERCULOSIS IN INFANTS AND YOUNG CHILDREN.—Martha Wollstein, M.D., and Ralph C. Spence, M.D., New York, summarize their paper on this subject by emphasizing the following facts:

1. The great frequency of tuberculosis in infancy and early childhood.
2. The suggestive decline of tuberculosis among the young children admitted to the Babies' Hospital during the last six years.
3. The greater incidence of tuberculosis of infants and young children acquired by inspiring tubercle bacilli compared with that acquired by swallowing the bacilli with milk or food.
4. The rapid generalization being, as a rule, in inverse proportion to the age.
5. The great frequency with which termination by tuberculous meningitis occurs.
6. The absence of any case of healed tuberculosis from this series of 184 necropsies on tuberculous children.—*American Journal of Diseases of Children*, January, 1921.

THE ETIOLOGY OF CHOREA.—Tumpeer reports a case which demonstrates the causative relation between the development of choreic symptoms and a septic focus in the tonsil. A child with chorea, who had so far recovered that twitchings had ceased, suffered an attack of acute tonsillitis with a subsequent peritonsillar abscess. Coincident with the development of these complications the nervous symptoms returned with greater intensity than upon entrance and as suddenly disappeared with the rupture of the abscess and the subsidence of the tonsillitis. It is interesting to note that there was a history of frequent tonsillitis but no history of rheumatism.—*Archives of Pediatrics*, December, 1920.

A STUDY OF THE RELATIONSHIP OF CONVULSIONS IN INFANCY AND CHILDHOOD TO EPILEPSY.—John Lovett Morse followed the condition of 107 children he has seen with convulsions. The time elapsed varied between 2 and 20 years. The cases were divided into four classes: (1) those in which the convulsions were associated with evidences of spasmophilia, (2) those in which the convulsions occurred in the course of whooping-cough, (3) those in which there was a single convulsion or a series of convulsions at the onset of some acute disease or with an attack of acute indigestion, (4) those in which there had been repeated convulsions during a considerable period or in which there had been repeated attacks suggesting petit mal. The results of this study were very unsatisfactory and very few conclusions could be drawn from it. His conclusions are as follows: Convulsions which are a manifestation of spasmophilia are likely to eventuate in epilepsy. Convulsions which occur in the course of whooping-cough must always be regarded seriously, as they are quite likely to be followed by epilepsy later. Single convulsions or a series of convulsions occurring at the onset of an acute disease or with an attack of acute indigestion are less likely to be followed by epilepsy than are repeated convulsions during a considerable period or repeated attacks suggesting petit mal. Repeated attacks which would be classified as petit mal, or which suggested it, are just as likely to eventuate in epilepsy as repeated attacks of general convulsions. Nothing can be told from the nature of the early attacks when epilepsy develops later. When an injury to the head has directly preceded the onset of the attacks or there is no apparent cause for the attacks,

epilepsy is more probable than when there is an apparent cause, such as indigestion, for each attack. The presence of an apparent cause for the attack does not, however, exclude epilepsy. The longer the attacks have persisted, the more probable is the diagnosis of epilepsy. General impressions, which cannot be explained, have a certain value in diagnosis. Finally and most positively, there is no way to determine immediately when a baby or child has a convulsion, or has had repeated convulsions or repeated attacks suggesting petit mal, whether it has epilepsy or whether it will develop later.—*American Journal of Diseases of Children*, August, 1919.

OTOLOGY, RHINOLOGY, ETC.

Conducted by J. V. F. CLAY, M. D.

VOICE AND SPEECH A NEGLECTED MEDICAL STUDY.—Levbarg writing upon this subject calls the attention of the profession to this very important subject which is neglected by the medical profession and especially the laryngologists, who have allowed it to be taken in hand by lay vocal instructors. Many of these teachers have little knowledge of the fundamentals of the anatomy, physiology and hygiene of the human voice. He enjoins the post-graduate schools to give more attention to this branch of laryngology. With the growth and appreciation of talented voices, it is possible to see an individual class of specialists in this line. He calls attention to the fact that voice is produced by vibration of the vocal cords due to the expiratory blast of air from the lungs and that the quality is reinforced by the resonating chambers, the cavities in the head. If this latter fact were well appreciated, the writer believes that there would be less operative interference and resulting less ruination of promising voices. He further suggests that the physician acquaint himself with the individual's method of breathing and his method of using the voice in singing, before making an examination of the throat. Improper breathing and lack of knowledge of the proper method of attack, causes the singer or speaker to use his muscles of phonation and the muscles of articulation incorrectly, thus causing an over-taxation of the muscles. This persisted in, brings about changes in the deeper tissues and finally relaxation.—*Laryngoscope*, November, 1920.

PERITONSILLAR ABSCESS SIMULATING AN INTERNAL JUGULAR PHLEBITIS.

—The patient, a young male, twenty years of age, complained of pain in the right side of the neck. The neck was oedematous, tender and red. The point of maximum tenderness two inches below the angle of the jaw and one inch behind the border of the sterno-mastoid border. The right tonsil was prominent, the pillars oedematous and reddened. Incision was made in the anterior pillar to the capsule of the tonsil and evacuated a few drops of thick greenish pus. Twenty-four hours later conditions about the same, except the oedema of the neck, which was worse, with chills and temperature ranging from 99 to 102. The tonsil was now dissected, freeing the upper pole anteriorly and posteriorly. Twenty-four hours later he was much more prostrated, the throat condition was the same and he had been having repeated chills. The tonsil was now removed. During this procedure several pus pockets were encountered. The following day the tem-

perature was normal and the patient made an uneventful recovery.—*Laryngoscope*, November, 1920.

A DISCUSSION OF THE PATHOLOGY AND ANATOMIC CURE OF CHRONIC PURULENT OTITIS MEDIA, WITH A SUGGESTED METHOD OF EFFECTIVE TREATMENT.—Callison remarks that this is one of the most hopeless conditions that the otologist is called upon to treat and that most descriptions in text books and current literature are entirely unsatisfactory. That the radical mastoid operation as a cure for this condition is not without much disappointment. Furthermore, that many patients who are subjected to radical operations are more or less constant visitors to the otologist, office for a goodly part of their life. Anatomic cure depends upon the complete dermatization of the promontory and all exposed areas extending from the otic opening of the eustachian tube. The columnar and cuboidal epithelium together with all the mucous glands must be destroyed. At the same time the bacterial flora present in the middle ear must be eliminated or reduced to a minimum. He advocates the closing of the eustachian tube in order to close off the pharyngeal route of further infection. Therapeutically, silver nitrate, in a saturated solution, is advised for the destruction of granulations and the mucosa. Iodine and phenol are suggested for the attempted sterilization of the middle ear cavity.—*Laryngoscope*, Nov. 1920.

SURGERY

Conducted by J. DEAN ELLIOTT, M.D.

THE ROENTGENOLOGIC DIAGNOSIS OF GALL-BLADDER LESIONS.—Roberts gives the technic of roentgenology, the interpretation and characteristics of gall-bladder shadows and a survey of a series of cases during the last year and a half, during which time his present technique has been in use. In conclusion the author notes: 1. The roentgenologic diagnosis of gall-stones and the dilated gall-bladder with a small percentage of failures is possible at the present time. 2. Negative diagnosis has a value that is proportionate to the intensity of detail and sharpness of image secured in the given case. Negative diagnosis has very little value in subjects so heavy that satisfactory roentgenograms cannot be made. Subjects of slight or medium body thickness can be roentgenographed with an intensity of detail that justifies an experienced interpreter in a negative diagnosis of stones or a dilated gall-bladder. 3. The roentgenologic diagnosis of gall-stones necessitates such an expenditure of time and money in the taking of satisfactory exposures, and so much experience in the interpretation of intensely detailed roentgenograms, that it is not at present a safe, practical method of diagnosis for general adoption. Ten or fifteen per cent. of stones can be plainly visualized even by an extremely poor equipment and technic; but under such conditions the importance to be attached to negative findings is negligible. 4. Gall-bladder roentgenograms of satisfactory detail can be made only with direct rays of low penetrating power, and duplitized films with fast screens. 5. An insuperable limitation of roentgenologic diagnosis of gall-bladder lesions is the apparent impossibility of securing roentgenographic evidence of chronic cholecystitis

without dilation or a new growth of the gall-bladder and biliary ducts.—*Jour. Am. Med. Asso.*, December 4, 1920.

ACUTE APPENDICITIS.—Bancroft has carefully analyzed 584 consecutive cases of acute appendicitis from the Second Surgical Division of the New York Hospital. Five hundred and fifty-nine of the patients who survived operation have been followed up and the final results carefully considered. The author feels that the review of a series of cases is in reality taking a list of stock. There are certain questions we ask ourselves in regard to our results and, although we may have assumed that we had a few complications, an analysis often changes our entire conception of the work accomplished. Years ago we were taught that if operation was not performed at the onset of the attack, it was wise to wait until the formation of the abscess. From the number of late cases we receive, one might assume that many members of the profession still believe this precept; but a study of our abscess cases shows that there is no decrease in mortality over acute appendicitis with free fluid, while the secondary complications and late sequelæ are greatly increased with abscess.

As a matter of economic efficiency, a patient spends much less time in the hospital and is returned to his normal occupation in a much shorter time if his acutely diseased appendix is removed at the earliest possible moment.

Regarding the omission of drainage in questionable cases, the fact that two of our patients who died (8 per cent. of the entire mortality in our series) might have been saved by drainage emphasized the old dictum, "When in doubt, drain."

Post-operative hernias occurred in 15 per cent. of drained cases, as revealed by an efficient follow-up system. The recognition of this high rate of incidence will be an incentive to every surgeon to attempt to reduce these figures in the future.

Prolonged drainage seems to us the greatest factor toward the production of post-operative hernia. The average time that these patients were kept in the hospital, twenty-seven days, as compared with nineteen days, the average of all the drained cases, suggests that it is not a question of getting the patient out of bed too soon; and as the percentage is relatively low between the years of 11 to 30, muscular exercise and hard work following operation are smaller factors than we had assumed. Our endeavor, therefore, must be directed toward small incisions with adequate drainage, protection being given as far as possible to the aponeurosis of the external oblique, which is susceptible to infection and is prone to slough when traumatized.

We have for some time been using the Carrel-Dakin technic in our drained cases, beginning about the fourth day after operation, and have performed a number of secondary closures with suture of the muscles. We believe that this will reduce the number of hernias in the future.

Conclusions: 1. The operation should be performed as soon as the diagnosis is made. Delay increases the mortality and post-operative complications, and prolongs convalescence. 2. Questionable cases should be drained. The possibility of hernia is better than an occasional fatality. 3. Post-operative hernia occurs more frequently than is commonly supposed after drainage, *i. e.*, 15 per cent.—*Jour. Am. Med. Asso.*, December 11, 1920.

THE HAHNEMANNIAN MONTHLY.

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ON THE MANAGEMENT OF PNEUMONIA.

BY

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(Read before the Homœopathic Medical Society of Pennsylvania, Sept. 22, 1920.)

IN presenting this brief paper, an effort will be made to arouse a greater interest in a subject which I believe merits our best attention. Yet in glancing over the files of numerous journals for a number of years, I find that comparatively few articles are to be found treating of the management of this very important class of cases. We are all aware of the fact that while every other curative disease has been brought under greater or less control, so that the rates of mortality and disability have been materially reduced, this disease alone seems to defy our best efforts and shows for each succeeding year heavier bills of mortality.

The question naturally arises, why is it that with ever increasing improvements in sanitation, a better understanding of the nature and treatment of disease and a wider diffusion of knowledge as to the care of the body, this one disease should be getting more and more beyond our control. We have our remedies whose efficiency has been thoroughly established, and proven beyond the question of a doubt. These remedies are, or ought to be, just as efficacious today as they were at any preceding time.

Again, those systems of practice which have apparently abandoned the use of drugs with the exception, perhaps, of serums and vaccines, are in no better plight. In fact these are

the systems which are contributing so largely to the high rates of mortality.

Sometime ago I visited the Health Office of the City of Pittsburgh and obtained a few statistics in regard to the mortality of pneumonia. It has been so high in most of our cities for the past few years, that as you all know, these cities have taken alarm and are endeavoring to carry on a campaign of education among the physicians and laity as well, in an effort to bring down the excessive death rate of this disease. Our city has lost many of its most valued citizens from this scourge within the last few years.

It was not until the year 1873 that any systematic method was adopted for the registration and classification of diseases in our city. The percentage of deaths in proportion to the total number of cases treated, and reported, is as follows: Taking the periods by decades instead of years, for the sake of brevity, we have for 1873, 14.81 per cent.; 1882, 18 per cent.; 1892, 22.24 per cent.; 1902, 29.54 per cent.; 1912, 28.41 per cent.; 1915, 32 per cent.

These totals are correct as nearly as I could estimate in the short time at my disposal, and represent the results from all systems of treatment. You will note that the mortality for the last decade is double that for the first. These figures are comparatively low, but you must remember that Pittsburgh is a strong center of homœopathic influence.

How much these figures are influenced by our homœopathic treatment I am unable to say. Since this time the mortality has been much higher, due perhaps, to influences referred to later. For the month of January, 1917, there was a reported mortality of 80 per cent. for all cases of lobar pneumonia. These figures were commented on in the daily press and created something of a sensation. However, it must be stated by way of explanation that this unusually high mortality rate was largely due to the number of enlisted men who came from the camps and were treated in the Magee Hospital, an institution taken over by the Government for this purpose.

In general, the treatment was as follows: In addition to the cold air system, the patient was first given a brisk purge. This was followed by the exhibition of aspirin to be pushed, if necessary, to the limit. Morphine was given to relieve pain. For the profound weakness following naturally in the progress of the disease and this intensive course of treatment, strychnia

and other stimulants were employed to revive the failing heart. The resultant death rate was alarming, and I am not in possession of the exact figures.

But aside from this particular series of cases, to what influence are we to ascribe this greatly increased mortality of late years? Is pneumonia, as found today, of a different or more virulent type than that of former years, or are we failing in some great essential of treatment?

What do we find as a guiding principle in the management of this disease today? Nothing less than the exposure of the patient to the inclemency of the weather—the so-called open air treatment, and the application of ice-packs to the chest and back. This method has come into general use and in spite of the almost uniformly bad results, is persisted in, with a degree of tenacity for which it is hard to account. I am told that this extreme method is only employed in this country and how it obtained such an extensive vogue is hard to understand. This paper is, in part, a protest against a system which can only be characterized as barbarous and unscientific. The principle upon which it is based, if it can be called a principle, is that a person afflicted with this disease can endure more and greater hardship and exposure than an individual in perfect health. To illustrate this method I will cite a case in point:

Last winter I was called in consultation to see a young woman in the last stages of lobar pneumonia. The patient's bed had been moved up to an open window, all the windows and doors in the room were open, the temperature outside was below the freezing point, and the weather stormy. The doctor in charge and the two nurses were dressed respectively in a heavy overcoat and long fur coats. During the consultation, I found the only treatment given was morph. one-eighth grain, exhibited four times a day from the first day of the attack. It is needless to say that the patient died in a few hours' time. In one of our large hospitals a method was tried of placing the patients in the yard back of the hospital following a heavy snow storm. These patients were placed in cots without any protection whatever. Every one of these cases died. Comment is unnecessary. I could cite a number of these cases which have come under my observation, but I think the above will be sufficient.

Again referring to the question of management, pneumonia, you will admit, is essentially a winter disease, charac-

teristic of and dependent upon cold and inclement weather. You will say it is due to a specific germ, true enough. This germ, however, requires certain conditions for its development. Pathologists tell us the pneumococcus is found in everyone's mouth and throat. All it needs is a little encouragement.

In Pittsburgh for the year 1916 the deaths from pneumonia for the various months were as follows:

January	424	July	60
February.....	284	August	58
March	316	September	78
April	216	October	127
May	159	November	190
June	69	December	259

This, it seems to me, should lead us to treat this disease under conditions more nearly approaching the favorable seasons of the year, and not to aggravate the case by accentuating the very conditions which promote its development.

I submit that this system of exposure to the inclemency of the weather and the packing front and back with ice, shows a lack of judgment and was probably suggested by the success attending this method in the treatment of pulmonary tuberculosis, and also as a reaction against the early practice of keeping the patient in a close stuffy room with an atmosphere loaded with foul odors and exhalations from the body of the patient. I remember seeing a number of these cases years ago when called in consultation.

To quote methods and results under exclusive old school treatment: Dr. Mills in the *Homoeopathic Recorder* for March, 1916, states that at the Rockefeller Institute they have been making an intensive study of pneumonia and are working out a serum therapy. According to Rufus Cole, of the Institute, four types of pneumococcic infection have been isolated, and the mortality according to type has been respectively: 24 per cent.; 61 per cent.; 60 per cent., and 70 per cent. Best results have been obtained by using sera according to type.

At the Johns Hopkins Hospital, Osler reports 658 cases of all types, with a mortality of 32 per cent. At each place the most skilful known treatment is given, barring the homœopathic remedy.

What I consider a rational method and one which I have found almost uniformly successful, is as follows: First, as

regards temperature, avoid cold and damp air in the sick room, using heat if necessary to remove dampness, and to bring up the temperature to a uniform rate of 70 degrees or 72 degrees. This should be carefully maintained. The air in the room should be moist, but not unwholesomely damp. The patient should be comfortably propped up in bed to aid the embarrassed respiration. Ventilation is most important. It should be arranged in a way that will maintain pure air at this temperature of 72 degrees. We should also remember the oil silk jacket, laced in front.

Diet must be looked after carefully. It should be liquid and partly liquid, of a nourishing and sustaining character. Early in the disease secure a thorough evacuation of the bowels.

Warm baths should be given daily by a competent nurse. These baths should be for the purpose of cleansing the body from the impurities thrown off and not merely to reduce the temperatures. For this purpose the addition of a drachm or two of household ammonia to a basin of warm water is helpful and very refreshing. Alcohol rubs may also be used to advantage. Oxygen by inhalation should be given early when indicated, and not left to the last as a death rattle expedient. Stimulants should be avoided or used with great care to tide the patient over stages of great weakness.

The homœopathic remedy is, of course, our mainstay and reliance. It would hardly be necessary to mention the remedy other than to urge the use of the polychrests as opposed to the use of unusual remedies, which an extensive knowledge of our *Materia Medica* might suggest. It has been said that Dr. Farrington, whose memory we all love to honor, would sometimes give, for instance, *badiaga*, when a simpler remedy might have cured the case.

I would suggest the following remedies in about the order given for their well-known characteristics: Camphor for the first chill, then *aconite* or *ferrum phos.* Think of *veratrum viride* for the stage of engorgement and to reduce high temperatures; it follows well after the chill, but would be of no service in the stage of hepatization. *Bryonia* for the stage of exudation and pleurisy. Then *phosphorus* in both the stages of consolidation and resolution. *Rhus.* for the typhoid type. Tartar emetic for the later stages and sulphur for delayed resolution. *Tuberculinum* 30 to 200 has shown splendid re-

sults in late stages and for the broncho-pneumonias of children and for delayed crisis. There is dry, racking cough with hectic.

These are mere outlines and you will readily recall other remedies which have served you well in carrying a case through to a successful termination. I believe that after the stage of congestion or engorgement, if the disease has not been checked, bryonia or phosphorus or tartar em. will be all that are needed to cure the case.

I note with interest that some of our brethren of the old school are abjuring some of the prevalent practices. I quote Waterhouse in the *Journal of the American Medical Association*, who gives the following key to his low mortality in pneumonia, viz.: No whiskey, or morphine, no digitalis, no strychnine, no aspirin, no ice-packs. He says that in the early stage of pneumonia we have a congested patch of lung tissues, the heart is pumping violently, trying to force the blood through this barrier, and here all remedies that are stimulating in their action increase the force and power of this pump, and instead of decreasing the blood that is being sent to this disabled part, a much greater amount is forced in, and the congested spot is constantly enlarged, until this inflammatory action involves the whole lung. This action causes the fever to run high (which, remember, is the result of the inflamed lung tissue and not the cause) and down go repeated doses of aspirin, or some other death-dealing coal tar agent, which disables this overworked heart, causing it to lay down on the job at the time of crisis. He cites cases in which he uses a drachm of specific (Eclectic) *Veratrum Vir.* in a glass half full of water, teaspoonful every hour. He also adds other remedies in other glasses, which I will not mention. I disagree, however, in his objection to whiskey, which, at the proper time, after the inflammatory stage has passed, is our best adjuvant and has helped to save many lives.

I will say, in conclusion, that I have found the methods outlined in this paper to give an almost uniform success, which in my own case, I would hesitate to express in figures. I claim no particular merit for these results, as I believe they are due only to the use of common sense and the exhibition of the clearly indicated remedy. I hope the brethren will seriously consider this question of management, especially as it relates to the needless exposure of the patient and the use

of ice-packs. If this is done I firmly believe that this dread disease will be robbed of half its terrors.

Homœopathy has gained its greatest triumphs in the treatment of pneumonia, and in no other disease has it shown such marked superiority to any and all other systems. Let us, therefore, with all confidence, adhere strictly to our remedy and avoid the use of dangerous fads and ill-advised expedients. In this way, while we will not cure all our cases, we will cure all that ought to be cured. It's not in mortals to command success; we will do more, we will deserve it.

DISCUSSION.

DR. JOHN G. WURTZ, Pittsburgh: Pneumonia is an inflammation of the lung; and with all inflammation, there is congestion, and with all congestion a stasis of blood in the blood-vessels. In the beginning of pneumonia, the lungs are congested, with a solid mass of blood in the capillaries and in the alveoli. The blood in the alveoli coagulates and forms fibrin, which is in part stimulated by the action of the pneumococci; and red hepatization results. The heart has to pump every bit of blood through the lung, and the part that pumps it is the right ventricle. If one gives digitalis or any other heart stimulant too early in pneumonia, one will tire the heart. It seems justifiable to believe that many of the deaths in pneumonia are due to over-stimulation or too early stimulation of the heart, particularly the right ventricle, which is not so strong as the left ventricle, being built to pump blood through the spongy lung, and not through a resisting mass.

From the pathological viewpoint, one can say, insofar as the heart is concerned, that the damage in pneumonia is done by too early or too severe stimulation, though much depends upon the extent of the lung lesion.

So far as the increase in the number of cases of pneumonia is concerned, there are two and maybe three factors, which may have some bearing upon that increase. The first one is that probably pneumonia is sooner recognized now than in former days, on account of increased facilities. The second is that by passage through animals of a certain type, the virulence of organisms increases towards that kind of animal. By passing through people, their virulence towards man is increased. The reason that an epidemic stops suddenly, it is believed, is because it runs out of its virulence. A third factor is the crowded condition in cities.

DR. RICHARD E. TOMLIN, of Lakewood, N. J., expressed his great interest in the papers that had been presented, and especially in Dr. Wurtz's remarks concerning the pathological features of pneumonia. The speaker expressed as his opinion that certain etiological features produced pneumonia because the lungs happened to be the weakest link in the chain. In the treatment of pneumonia, we must consider that that special disease is not the entire patient, and that other organs of the body are influenced. Toxemia is an important factor, and we should utilize every means at our disposal to eliminate the toxins. Dr. Tomlin believes that fresh air is most important, but cold air he regards as fatal, because it influences the nervous system unfavorably. He also approves of bathing the skin first with soap and water and then with epsom salts solution which he regards as the best of all cleansers. More important than freshness of the air is the fact that recent observations prove that that air is made efficient by being kept in motion. Cleanliness of the mouth and nose is a necessary but simple factor. Byronia is the remedy in which he has the most confidence. Other medicines which are useful and in which he has faith, are camphor, phosphorus, gelsemium and ferrum phos.

DR. IRWIN D. METZGER, of Pittsburgh, spoke of the importance of systematic hospital records. In hospitals attached to educational institutions comparatively little difficulty is encountered in maintaining good record systems. The ideal record demands that all the data presented shall be so complete as to convince the reader thereof of the accuracy of the diagnosis and of the rationale of the remedies prescribed. The symptoms upon which drugs are prescribed should be recorded and especially should we note the influence of such remedies. After a few years spent in following out such a system, we shall be able to present positive proofs as to results. There is nothing that we can do of greater importance than this, and until we do it, we cannot prove to others the scientific character of our work. What is more, we should make as complete records in our private practice as we do in hospitals.

DR. ANNA JOHNSTON, of Pittsburgh, prompted by Dr. Metzger's remarks, concerning records, said that she had observed from study of series of them that the doctors who stuck the most closely to the homœopathic remedy and who prescribed most accurately as indicated by the symptoms were the ones by whom the disease was cured in the shortest time. One physician carried the patient straight through on but one remedy. The patient may not have been very sick, of course.

The speaker felt, however, that the best results were obtained by those who used the fewest remedies.

DR. R. W. McCLELLAND, in closing the discussion, said that while he favored exactness, there was such a thing as overdoing it to the extent of being impractical. Dr. Cabot, of Boston, who, as all of us know, is a strong advocate of systematic record statements, is on record as stating that in the best institutions there are a number of cases which show the absence of a positive diagnosis, and this without being derogatory to the standing of the hospital. Nevertheless, it should be our aim to make our hospital records perfect.

A RESUME OF THE CAUSAL FACTORS AND MODERN TREATMENT OF MALIGNANT NEOPLASMS OF THE SKIN.

BY

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(Read before the Homœopathic Medical Society of the State of Pennsylvania, at Harrisburg, Pa., Sept., 1920.)

By malignant neoplasms I naturally refer to cancer, and my discussion will, therefore, limit itself to cancer of the skin. I shall begin my remarks by tracing the presumed etiology of cancer from the earliest days until our present time. The oldest records in connection with the history of this disease appear to be the writings of a Roman scholar upon the subject about the year A. D. 40, and the description therein given is a fairly good one.

The etiology of cancer was not divorced from superstition and evil spirits, even though the disease had been long recognized, until about the year 1870, at which time Durante advanced his prenatal misplaced cell theory; neither did it become a scientific study until about this same year.

Cohnheim, about the year 1874, caused such prominence to be given this theory by his published observations, that since that time it has been known as Cohnheim's prenatal cell theory. Subsequently, many theories as to the cause of cancer have been advanced; but it has only been within the past fifteen years or so that the American profession has attempted a systematic study of the etiology of the disease.

Cohnheim believed that cancer arose from congenitally displaced epithelium, beginning to grow riotously, clinically illustrated in the various forms of naevi, moles, etc., but it is claimed by latter day experimentors that they have not observed such misplaced cells until after malignancy has developed.

Again, the occasional development of malignant growths in scars from burns, lupus, syphilis, etc., is not explained. Latin prompts the question: Why should this misplaced embryonic cell remain at rest for so long a time, while this portion of the body may have been subjected to similar injuries from former occasions? and goes on to state:

Granting that an epithelial cell of one type may be changed into an epithelial cell of another type, it has never been proven that one type of cell may turn into a radically different type. Metaplasia in epithelial tumors is certainly confined within very narrow limits. This theory is far from satisfactory because it offers no explanation as to why these changes take place.

The hypothesis advanced by Ribbert adds to Cohnheim's theory the probability of post-natal cellular displacements as well as the pre-natal.

This theory is called upon to explain why should not carcinoma develop more frequently within the scars of injuries or operations where displacement is the common instead of the uncommon consequence.

It is also asked to explain why sarcoma is so common among the deeper structures of the body lying beneath the point of cellular displacement. It is recognized, however, that carcinoma as well as sarcoma do sometimes give a history of origin from some trauma having previously occurred over the affected tissues.

According to Thiersch, in carcinomata the primary change occurred in the connective tissue; his opinion being that there was a weakening of this tissue which permitted the epithelial cells to expand and penetrate into it. However, his assumption that there was an antagonism between the epithelial and the connective tissue cells, is not justified.

It is a well-known fact that in many conditions, such as in X-ray cancer, for instance, the primary change does not occur in the connective tissue, but there are no recorded facts which justify the belief of Thiersch.

From the micro-organic point of view, Ewing cites the following list of parasites which have at one time or another been supposed to be responsible for cancer: Bacteria, sporozoa, blasto-mycetes, mycetozoa and spirochete.

This list with its sub-divisions (not quoted) is interesting from two viewpoints: First, it indicates the tremendous amount of work that has been done upon the subject; second, the frailties of human judgment, as while none of the experimentors published the result of their efforts until they felt sure they had confirmed it, nothing of value arose from their work except a skepticism upon the part of other workers. However, who knows but that some modernist will yet prove to us that cancer is a disease that has as its causal factor a micro-organism?

Since the discovery of the tubercular bacillus, followed shortly after the isolation and experimental proof of the spirochete *pauuillum* as the infecting organism of syphilis, a like announcement with relation to cancer has been awaited by the whole medical world.

As we all know, the diet theory has had its advocates, and much prominence has been given to it by a recent publication by a New York author of a book entitled the "Cause of Cancer." However, this theory does not appear to have any firmer foundation in fact than do many of the other theories which have been advanced.

As to whether or not cancer is contagious, there are certain known facts hereinafter related which seemed to demand consideration.

It is known that cancer seems to be more prevalent in some localities than in others.

It is also known that nurses who have cared for cancerous patients over a period of years seem to be especially liable to suffer from the disease.

That cancer is inoculable within certain limits is beyond dispute. Since 1903 the work of the experimental laboratories has been principally devoted to the study of spontaneous cancers which so commonly affect rats and mice, and it has been discovered that certain sarcomas and carcinomas can be transmitted by inoculation into horses, dogs, birds and chickens, the two latter having proven the most susceptible to the inoculation.

In considering the incidental factors we have age, sex, race, heredity, trauma, light and occupation.

Cancer of the skin is usually to be found in the senile, and is almost equally divided between the two sexes, except cancer of the mouth, which is peculiar to the male sex.

The full-blooded American Indian is rarely a victim of the disease, and the negro only occasionally suffers from basal-celled cancer. The Hebrew seems to be unusually susceptible to the multiple, idiopathic, hemorrhagic sarcoma of Kaposi.

With respect to heredity, based upon present clinical data this seems to have no important bearing upon the production of skin cancer. However, it is to be remembered that some of the multiple benign growths are very often to be found in members of the same family, and while on this subject of heredity the important work of Maud Slye should not be overlooked. She has shown that in mice the tendency to develop cancer is transmitted from generation to generation in strict accord with the laws of heredity, and that it can be bred in and out of strains of mice at will. It is to be here pointed out that it is not cancer itself which is transmitted, but the tendency of the cells to produce cancer under favorable conditions.

Cancer of the skin usually selects as its site of predilection a spot in the skin which had been subjected to more or less continuous irritation, or upon some abnormal part of the skin such as a wart or mole.

It has been shown by Hyde that those who are subjected most to the light of the sun are more apt to become victims of the basal-celled carcinomata, preceded usually by a keratosis. Hyde's conclusions with relation to the effect of light in the production of skin cancer are fully concurred in by Lawrence, and Unna, as well, has described a condition known as "sailor's skin," which is not alone peculiar to seamen but also to those exposed to much light. It may be definitely stated that undue exposure to actinic rays certainly is, in a measure, responsible for the production of cancer of the skin.

As to occupation, much has been written upon this phase of the subject, and from the reported cases it is undoubtedly true that cancer of a mild form is very common among those occupied as chimney sweeps, tar and paraffin workers.

It hardly seems probable that we should still consider

cancer as a constitutional disease. We can most certainly deny the fact that cancer is really transmitted by inheritance. We can say, however, that certain families do inherit a type of cell structure which has less resistance to the possible implantation of a cancer germ; because I believe thoroughly that the parasitic theory of cancer will be affirmed in time.

While histologically there is shown an excessive reproduction of cells which destroy surrounding tissues and structures, and put in their place their own progeny, it can be explained on the hypothesis that a cancer develops and reproduces itself because of the stimulation of such cells by the presence of infecting germs, causing a change in character of the cells from their normal condition into that of the characteristic cancer cell.

That is, the entrance of a cancer germ upon a site which has been undergoing a slow process of irritation or stimulation enacted over a number of years, and even, it has been clinically reported, upon the site of a single injury or irritation, shows that it seems necessary to have a lowered vitality or some existing abnormal condition of the skin itself.

Gaylord, of Buffalo, and Plimmer, of England, are thorough in their convictions that they have a protozoon that produces cancer, while Canfelice, of Italy, contends that a mycetic fungus is responsible for cancer growths.

The question as to how the parasite enters into the body has been discussed by Parke, who, according to Knelliott, mentions twenty-eight cases of husbands having received cancers from their wives.

In cancer of the lip, mouth, etc., it is possible that the germ may have its entrance through the normal bodily openings. Constant irritation from cigar and pipe smoking, decayed teeth, etc., may be the niches for the entrance of the parasitic germ.

It has been pointed out that certain houses have possibly contained the infecting germ because of the presence of cancer on those who have resided in these houses for successive years.

It has, as well, been demonstrated that infection of cancer may have been due to germ life, because of the fact of epidemics occurring among smaller animals confined in cages, of which very interesting accounts are given by Loeb, Michaels, Borrell, Gaylord and Cowells.

Any existing constantly inflamed area in the aged showing evidences of degenerative changes, or even without that evidence, should always be looked upon with suspicion as being cancerous.

It certainly must be borne in mind that the clinical pictures of skin cancers include a large number of types which are not generally recognized as belonging to any particular group, but are sometimes mistaken for the infective granulomata and other skin diseases.

The clinical pictures are usually sufficient to enable the expert to make a diagnosis on them alone; but the safest course to pursue in nearly all cases is to confirm that diagnosis by microscopic examination.

The summarizing of the modern treatment of cancer can be briefly stated:

Every drug known to medical science has been tried for the relief of cancer by internal medication. In the hands of the dominant practitioners of medicine they have absolutely failed.

It can be stated, however, to the credit of the homœopathic school, that they do have some remedies which will at least ameliorate the distressing symptoms in cases of cancer.

Until recent years, the local application of arsenic plasters, pyrogalic acid, zinc chloride, and acid nitrate of mercury have been used; and so-called "cancer plaster" having been used particularly in the hands of cancer quacks, doing more harm than good, the patients suffering the most intense agony for weeks at a time.

Caustics of this type are mentioned merely to condemn them, as their action is uncontrollable because there is no way of determining their depth of penetration; so that, while they may temporarily heal over, there is always a marked tendency to recurrence.

There is only one course to pursue and that is the early, complete removal of all malignant neoplasms. The modern physician does not now believe that the knife is the only possible method of complete eradication.

The modernist has various methods of procedure, namely, refrigeration, thermo-cautery, electro-dehydration, thermo-albumenization, the X-rays and radium.

After twelve years' experience, the author contends that refrigeration still holds good in certain selective types of malign-

nant neoplasms, being of little use in the hard, nodular types of cancer, particularly of the lip.

Electro-dehydration or thermo-albumenization, in other words, deep penetration, practically covers all types of treatment for skin cancer, followed by thorough cureting and removal of the dehydrated mass, with a final dehydration of the base of the exposed areas.

The method is practically bloodless as the electrical current rapidly controls hemorrhage.

The after-treatment consists of irritations with the ultra-violet rays from either the water-cooled or air-cooled quartz mercury vapor lamp. This stimulates rapid regeneration with practically little or no scar formation.

This method of treatment is as well applicable to malignant neoplasms of the buccal cavity.

REPORT OF AN EPIDEMIC OF PUERPERAL INFECTION AT THE HAHNEMANN HOSPITAL, PHILADELPHIA.

BY

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HARRIET E. SMITH.

(Read before the Homœopathic Medical Society of Pennsylvania, Sept., 1920.)

It was my privilege during my service in the Pathological Laboratory of the Hahnemann Hospital, to study, under the direction of Drs. Sappington and Hopp, an epidemic of infections which occurred in that institution during the Spring of 1920. Apparently clean surgical cases at the time of operation soon became infected. This was noticed with equal frequency in both ward and private cases.

During the early part of March this epidemic took on such a serious turn in the gynecological wards of the women's building that it was necessary to refuse admission to new patients in order to control the epidemic. Cases operated during clinic, with perfect technique, and clean in every way, soon ran high temperatures, became toxic and died. Unfortunately those in the laboratory were permitted to see but three of these cases. In each case we took repeated blood cultures, but all proved to be sterile. In case No. 3 the culture of the

wound and discharge which was very slight, failed to reveal anything but staphylococcus. However, immediately after death, Dr. Taggart opened the incision and made a culture from the peritoneal cavity which gave a hemolytic streptococcus.

Most of our work was done in the obstetrical wards, but here again we were somewhat hampered by the fact that the epidemic gained such headway that the wards had to be closed because of the shortage of nurses to handle such serious cases. Out of 22 cases studied in this department none resulted fatally.

Case after case would develop a temperature about the second or third day after delivery and after careful investigation by Dr. James, the Chief-of-Staff, the usual causes for such temperatures would be excluded.

The onset would occur about the second or third day after delivery, with a sudden rise of temperature, without a chill, and would follow an irregular septic course, ending by lysis anywhere from the fifth to nineteenth day, usually about the twelfth. The pulse was, as a rule, slow in proportion to the temperature, which varied from 99 to 105 F. Upon several occasions, however, the pulse rose to as high as 140.

There were practically no subjective symptoms beyond an occasional headache, or a slight feeling of malaise. In fact the patient usually said that she felt perfectly well during the entire course of her illness. All objective symptoms were also negative. There was no increase in the size of the uterus, nor was pain or tenderness present at any time.

The leucocyte count was usually between 11,000 and 18,000 although one case showed a count of 38,000.

Urine analysis was uniformly negative.

The chief diagnostic points were: Persistent high temperature without symptoms, relatively slow pulse and positive culture.

After several of these cases had developed, it was suggested by my associate, that an intrauterine culture would be of some value. Accordingly we made some specially designed pipettes, by bending ordinary glass tubing at an angle of about 45 degrees and placing an ordinary rubber nipple at the one end. After sterilization it was rather a simple matter to insert this tube through the cervix and procure sufficient material to make a culture. Intrauterine cultures were thus secured on

agar slants, using the strictest surgical precautions, to prevent any contamination, and were immediately sent over to the laboratory where we diluted the agar slant and subcultured on blood agar slant. Later for the purpose of studying the morphological features of the organisms, we infected a tube of blood bouillon and in order to prove whether or not the organisms were hemolytic we infected agar blood plates.

Our results were rather astonishing, for with one exception, every case running a temperature in which a uterine culture was made we were able to secure a streptococcus which was strongly hemolytic.

It should be recalled that normally the uterine cavity is sterile.

MacFarland in "Pathogenic Bacteria and Protozoa" says: "The vagina on account of its acid secretions harbors but few bacteria. In a study of 40 cases of pregnant women who had not been subjected to digital examinations, douches or baths there was found but few organisms. In health the uterus harbors no bacteria and but few in disease. The intervening acidity of the vagina makes it difficult for bacteria from the surface to penetrate so deeply and the tenacious alkaline mucous of the cervix is an additional barrier to their progress."

DeLee quotes Winter, Menge and Walthard as proving that the normal uterine cavity is sterile, but for our own satisfaction we ran a series of control cases which bore out the fact that most uteri in fever free cases were sterile.

The one exception noted above was case No. 7 in which we found and reported a pseudo-diphtheria bacillus, later discovering that the patient had had a pseudo-diphtheric membrane on her cervix; this probably caused the flight of temperature as we were unable to find any other organism, although she was cultured several times.

Case No. 17 was a most interesting one to us. Dr. Paxson cultured her and sent it over as a "control" case, as up to the time of securing the culture she had no temperature and had been running a perfectly normal course. To our surprise we found a hemolytic streptococcus, and upon further investigation it was noted that in the evening of the day the culture was secured the patient started to run a temperature. This fact tended to convince us that this organism was the cause of temperature as it was found before any symptoms had occurred.

The next question which confronted us was to find the source of this infection. Investigation along this line proved futile. We made cultures and subcultures from the walls of the various rooms and wards, including the operating room and delivery rooms. We exposed plates of agar in various rooms, cultured radiators, beds, lamps, etc., etc., but found only harmless organisms. Bed pans and douche cans, as possible carriers were closely studied, but many repeated cultures revealed nothing but colon bacilli, *bacillus proteus vulgaris* and other organisms which bore no relation to the cases under our study.

Upon repeated occasions we took cultures during the progress of a delivery, starting from the time that the patient was admitted to the "waiting" ward, in labor, until the delivery was completed. Numerous cultures were made from the patient, the interne's hands, instruments and various solutions, towels, table-covers, etc., etc., but we found nothing. Cultures were also taken from the vulva and vagina of patients during delivery, but again we could find nothing but the usual flora of the vagina and vulva.

Someone suggested that influenza might have some relationship to the infections, but our patients seemed to be especially blessed with good health as their past history in every case was practically negative.

The treatment from our standpoint was rather discouraging. In every case, as soon as the hemolytic streptococcus was isolated we made an autogenous vaccine and injected the patients with liberal doses, varying from 30 million to 200 million, giving them intravenously. These vaccines apparently had no effect as the case would run its usual course uninfluenced by the medicine. Stock vaccines were also tried but with the same results.

The clinicians prescribed rest in bed, soft diet with forced water (at least eight ounces every four hours) and the following remedies:

Belladonna.

Tincture Echinacea.

Hexamethylene gr. x t.i.d.

Aconite.

Sodium Bicarb.

They report that as far as results were concerned there was practically no difference, for whether homœopathic remedy, old school, or vaccine was used the course of the illness

was about the same. In fact, one case received no medication whatever throughout the entire course of her illness and was found to differ in no way from the other cases.

SUMMARY.

1. Number of patients from whom intrauterine cultures were made 22
2. Number of other cultures made, *i. e.*, tables, walls, doors, radiators, bed pans, douche cans, instruments, etc. 25
3. Number of intrauterine cultures taken from cases having temperatures 15
4. Number of cases with temperatures in which we found hemolytic streptococcus 11 or 74%
5. Number of cases with temperatures in which the cultures were sterile 2 or 13%
6. Number of cases in which other organisms were found 2
(One showed staphylococcus, other pseudo-diphtheria.)
7. Number of control cases cultured 7
8. Number of control cases giving sterile cultures 6
(Other control case showed presence of *B. pseudo-diphtheria*.)

DISCUSSION.

DR. NATHANIEL F. LANE, of Philadelphia, said that he had been in the midst of the epidemic described by Dr. Ursprung. He further remarked that conditions became so bad that he and his associates were obliged to close the wards for the period of one month. He gave up all major work and did as little minor work as possible, not only at Hahnemann, but everywhere else. This epidemic was by no means confined to Hahnemann Hospital. Answering a question of Dr. Loos, he said, "we just stopped operating until we had everything cleaned out, and then the hospital was thrown open again."

THE MARROW FACTORS IN GRAVE ANEMIAS.

BY

S. W. SAPPINGTON, M.D., PHILADELPHIA.

(Read before the Homœopathic Medical Society of Pennsylvania, Sept., 1920.)

THE bone-marrow is one of the most ignored of the major organs. Consider the weight and discussion allotted the liver, pancreas or kidneys by the clinician; compare it with the total lack of attention to the marrow by the internist. The surgeon scorns it as prey. It is seldom seen even at autopsy. Yet here is an organ which is the source of supply of such vital elements as red blood cells, polynuclear leucocytes and blood plates. The object of this paper is to emphasize the advantage of visualizing the bone-marrow and to indicate the clinical means of so doing.

Anemias, from the standpoint of effect, might be classed as contributory and grave. A contributory anemia would be one in which the blood impoverishment contributed more or less to the total illness of the patient but always as a minor feature. A grave anemia would be one in which the blood reduction was so extreme as to threaten or effect the patient's end, the blood state being a major feature. A mild, contributory anemia or a severe, grave anemia might be either primary or secondary. The most important of the grave anemias are pernicious anemia, aplastic anemia and idiopathic purpura hemorrhagica. Incidental grave anemias are not uncommon. For example, in the leukemias particularly the acute form; in post-hemorrhagic anemias as in uterine fibroid and operated jaundice patients; in toxic anemias as in benzol poisoning; and occasionally in malignancy. In any grave anemia, except that of acute massive hemorrhage, the status and outcome of the case depend upon the bone-marrow. The anemia may be aplastic, hemolytic or hemorrhagic: the question is always, can the marrow meet the occasion? The patient lives or dies by his marrow in grave anemias.

Disregarding for the moment the actual causes of anemias, we may observe that the blood impoverishment may arise outside the marrow from:

(a) Sudden great or persistent small losses of blood—hemorrhage.

(b) Red cell destruction within the vessels—hemolysis as in pernicious anemia or hemolytic icterus.

(c) Blood plate destruction within the vessels—leading to hemorrhage (purpura hemorrhagica?)

(d) Qualitative defects in blood plates—leading to hemorrhage (hemophilia?)

These extra-marrow factors increase the complexity of the anemic problem and should be given due consideration.

Within the marrow, the abnormal possibilities are many. The marrow is the normal producer of red cells, granular leucocytes and blood plates. It must balance by production the normal loss. It may show general, uniform failure of production down to complete aplasia. Or it may first fail in the blood plates (megakaryocytes) and later in the red cells; or vice versa. The marrow is the normal regenerator of erythrocytes, granular leucocytes and blood plates in cases of emergency. When the emergency becomes actual disease, the marrow may maintain the hemopoietic balance almost perfectly for a time, even a long time, but eventually fails. The regeneration, on the other hand, may be excessive in one particular at the expense of other normal products. For instance, in acute or chronic myelogenous leukemia, the white cell production is so immense as to crowd out the red cells and incidentally produce a grave anemia (myelophthisis). Formation of one element may fail, as apparently occurs in some anemias, where blood plate production is wanting. This may induce a vicious circle by leading to hemorrhage sufficient to cause marked anemia; and this in turn demands great marrow activity, which lasts for a certain time to give way in time to exhaustion. Or the reverse may obtain as in aplastic anemia where the lack of red cell production establishes an anemia which later is aggravated by hemorrhages as blood plates fail. Benzol is almost a specific marrow poison and seems to attack in the order named, polynuclears, leucocytes, blood plates and red cells. Primary regeneration reaction of the marrow may secondarily alter and change the type of anemia. In pernicious anemia, the balance is maintained by the marrow with more or less success for some time. Finally, the marrow may become exhausted and this is evidenced in a terminal blood picture of aplastic anemia.

Routine blood examinations, consisting in the estimation of hemoglobin, the enumeration of red and white cells, the

differential count and the examination of the blood spread, will establish in most instances the clinical blood diagnosis or the type of anemia. And this diagnostic report, as a rule, satisfies the clinician. But with the diagnosis made, it is equally important to ascertain the prognosis, and blood examinations are seldom made or requested with this in view. Others have called attention to this point. "Thus, in order to gage the power of regeneration and formation of the formed elements, one must study the activity of the marrow. One must scrutinize, not only the increase of bone-marrow activity, but also the intensity and quality of that activity and its possible relation to the therapeutic procedure"! The simple blood count will not furnish the information because a given number of red cells, for example, "merely represents the balance of destruction and formation."* A rising red count may not mean a hopeful marrow but only lessened destruction.

Marrow activity or inactivity is reflected in the peripheral blood, as far as the grave anemias are concerned, in the red cells particularly and to a less extent in the polynuclear leucocytes and blood plates. Visualization of the marrow is possible in the ordinary blood spread by attention to certain characteristics of the red cells. When the hemopoietic system is functioning normally, the blood spread is supplied with erythrocytes of remarkably uniform size, shape and staining reaction. When the marrow is struggling actively to balance an anemic blood, young imperfect cells make their appearance in the blood and the spread will show variations in size (anisocytosis), shape (poikilocytosis) and staining reaction (polychromatophilia). Nucleated erythrocytes, blasts, are found as the anemia becomes extreme and certainly indicate marrow activity, but this feature must be interpreted with caution. For while we might assume that a shower of erythroblasts meant a marked marrow reaction we must also remember that these primitive red cells suggest that the desperate marrow may be approaching exhaustion in an unequal struggle to balance the anemia. One thing we may safely say of the foregoing changes and that is at least they mean that the marrow is not aplastic. Howell-Jolly bodies, supposed to be nuclear fragments, are found within red cells in grave anemias particularly after splenectomy. Like the blasts they are in some way re-

*Lee, Minot & Vincent: *Journal American Medical Association*, 1916, lxxvii, 719.

lated to marrow activity, but their significance is as yet not very definite. When the marrow is aplastic, all these signs of red cell regeneration are wanting. The erythrocytes of the blood spread are remarkable for their normal appearance.

By a process of vital staining with brilliant cresyl blue, about .8 per cent. of the normal red cells may be shown to contain a reticulum. These reticulated cells, according to Lee, Minot and Vincent, furnish the most reliable data we have concerning marrow activity of the red cell elements. In grave anemias where the marrow is active or stimulated the percentage of reticulated cells may run up to 20 or above. In grave anemia where the marrow is aplastic, the reticulated cells may disappear. Not only the percentage but the character of the reticulum may be of significance. Cells containing a heavy, knotted reticulum, usually in the center of the cell, are found in large numbers under conditions of very active blood regeneration, according to Lee and his co-workers. They have noted such cells in hemolytic jaundice and temporarily after direct hemorrhage in normal subjects. In cases of pernicious anemia in which a high percentage of reticulated cells preceded or was associated with a rising red count, it has been observed that as the erythrocytes approached normal, the percentage of reticulated cells dropped to approximately a normal level, indicating the subsidence of the abnormal but necessary bone marrow activity. The favorable or lack of favorable effect of such therapeutic procedures as transfusion and splenectomy is reflected in the reticulated cells which may show an increased percentage anticipating the rising count and clinical improvement. A comprehensive view of the situation, however, is not taken if we overlook the fact that increased blood destruction may nullify a favorable marrow reaction (as indicated by the increase of reticulated cells) and block a rising count and clinical improvement.

Leucocytic findings are more significant of an inactive than of an active marrow. The marrow produces the granular leucocytes and when it is under-functioning, even though it is reacting, the polynuclears should be reduced absolutely and relatively. This is just what occurs in pernicious anemia where the leucocyte count is characteristically low and the differential count shows a low polynuclear percentage and relatively high lymphocyte count. In this disease, the leucocytes are commonly under 5,000 and often 2,000 to 3,000. The low

count is due to the low production of polynuclears because the lymphocyte percentage remains high, about 45. That this is dependent on an inadequate marrow as far as leucocyte production is concerned is indicated by a rise of the leucocytes to normal with remissions in many cases. In aplastic anemia where the marrow is scarcely producing at all, the negative polynuclear count is striking. Here the leucocytes are commonly 2,000 and under. A case we have just been studying gave on two occasions white counts of 1,400 and 1,200 with lymphocyte percentages of 78 and 83. In benzol poisoning which acts almost specifically on the marrow and particularly on the leucocytes, the aplasia is still more complete. Selling reported two cases in which the leucopenia reached 480 cells in one case and 140 in the other. The slight or moderate leucocytosis which is found in most of the secondary and some of the grave anemias indicates that the marrow is reacting well as far as the white cell elements are concerned. In purpura hemorrhagica, the white cell counts average above normal and it may be in this disease the case dies from the continuous hemorrhage rather than marrow failure. On the other hand, excessive leucocytic reaction may indirectly be as harmful as its absence. This is seen in the acute and chronic myeloid leukemias, already mentioned, where the enormous white cell production is at the expense of the red cells and plates of the marrow with consequent grave anemia and hemorrhage.

Blood plate findings roughly parallel those of red cells and white cells and have the same significance. In the grave anemias blood plates are usually marked by reduced or nearly absent. With improvement, spontaneous or due to therapeutic procedures, the blood plate count rises. All this indicates favorable or unfavorable marrow reaction in most instances. In purpura hemorrhagica, the dominant and striking feature is the reduction of blood plates which may fall from a normal 250,000 to 1,000. The blood picture, as Minot** points out, "is consistent with a bone-marrow which is unable to form platelets, but to a greater or less degree is able to produce polynuclear leucocytes and red cells." Yet there is evidence that the marrow has not failed in this respect, the megakaryocytes being numerous and normal in some spontaneous and experimental purpuras. The blood plate reduction would then be explained by destruction in the peripheral blood. A low

** Minot, G. R.: *Arch. Int. Med.*, 1917, xix, 1062.

blood plate count, therefore, cannot be taken as certain evidence of marrow inactivity, though it is of corroborative value. However produced, the effect in inducing hemorrhage is the same and the final result of an exhausted marrow may follow. Blood plate increase is an excellent sign of marrow stimulation which is well illustrated in post-hemorrhagic anemias. It is also a good sign after splenectomy. In chronic myeloid leukemia, the excessive leucocyte production is accompanied by a marked increase in megakaryocytes and the blood spread and count show great numbers of blood plates. The stimulation here is distinctly pathologic, as it probably also is in Hodgkin's disease.

A study of marrow activity is valuable as a guide in therapeutic procedures in grave anemias. Blood transfusion and splenectomy in pernicious anemia have been found valuable stimulants of the bone-marrow. Indeed, the hope of transfusion lies not so much in the blood furnished as in the stimulus to the marrow to help itself. The condition of the marrow as reflected in the blood picture is more or less of an index of what might be expected from transfusion. If marrow activity is present and exhaustion is not threatening, the chances of still further activating the marrow are good. If, however, we are dealing with an aplastic anemia or a pernicious anemia in which the marrow is exhausted or inactive, we cannot hope much from transfusion. We may give one or two transfusions to ascertain if stimulation can be effected but a long series is not indicated. Likewise, splenectomy would seem to be prohibited in aplastic anemia. In purpura hemorrhagica, in our experience, the results from blood transfusion have been extremely disappointing, and we believe this to be due not to the ineffectiveness of the donated blood nor to the lack of marrow response, but rather to hemorrhage which steadily and persistently overbalances the combined effect of transfused blood and active marrow. The same thing holds for leukemias. Blood transfusion is not indicated because the patient, while more or less anemic, is not dying from his anemia or his erythrocytic marrow failure but from the primary, toxic, unknown cause of the leukemia. On the other hand, conditions are almost ideal for transfusion in marked acute post hemorrhagic anemias, because the donated blood tides the patient over the acute emergency while the slow but

sure working normal marrow mechanism finally restores the blood to normal.

SUMMARY.—In grave anemias, attempts should be made to visualize the bone-marrow by attention to certain features of the clinical blood picture. This is important because, excepting exitus through massive hemorrhage, the anemic patient lives or dies by the activity or inactivity of his bone-marrow. The condition of the bone-marrow as evidenced in the blood picture is the best guide for such therapeutic procedures as blood transfusion and splenectomy. The study of reticulated cells probably furnishes the most reliable information concerning erythrocytic marrow activity.

GOITER.

BY

HERBERT L. NORTHPROP, M.D., F.A.C.S.

(Read before the Philadelphia County Medical Society, March, 1920.)

WITH its etiology uncertain, its pathology still imperfect, its nomenclature illy-defined, and the internist, the roentgenologist and the surgeon all laying claim to its treatment, goiter presents to us several interesting problems. Nothing of proven value in the prophylaxis of goiter has been proposed so far by anybody, except to avoid dwelling in regions where goiter is endemic, or as suggested by Kimball, Rogoff and Marine (*A. M. A. Jour.*, Dec. 20, 1919), to administer two gm. of sodium iodid *twice yearly*, to young (school) girls. These gentlemen claim retardation of growth of the thyroid enlargement and lessening in size. I regret to say that I believe these experiments prove little or nothing and I fear that Rogoff's conclusion that "simple goiter in man may be prevented on a large scale" is not substantiated. Therefore, today we know little or nothing more regarding the prevention of goiter than we knew a century ago. Other peculiarities stand out more conspicuously than with most organs; for instance, the thyroid gland may exert a very baneful effect upon the metabolism of the body without having undergone any enlargement whatsoever, and yet its ensemble of pathological manifestations is called goiter, although by common consent that name is per-

mitted to imply a visible hypertrophy of the thyroid. Again, an enormous goitrous tumor may be present but be absolutely without systemic effect.

Here are suggested the two extremes of thyroid disease: the serious, toxic goiter without any or only very moderate increase in the size of the gland, and the huge, cystic goiter without any toxic manifestations. The latter may be removed surgically, with impunity; the former is almost forbidden fruit to the surgeon. It is in goiter, therefore, that extremes are found, even though they do not meet. All of which is worthy of note, for probably no class of cases should be so carefully individualized and selected when the question of surgical treatment arises as this.

Because of its protean features, or possibilities, the diagnosis of goiter and its treatment present a most fascinating field to the medical profession today. A friend of mine (but not a patient) Dr. H. H. G., was told and he believed that he had diabetes. His urine contained sugar, and he failed in health seriously and rapidly. No one even suspected that he had a goiter, and he presented none of the usual clinical symptoms of such. In desperation he went to Vienna and consulted Dr. Von Norden regarding his diabetes, who told him, to his great surprise, that he did not have diabetes, but had a goiter and that he should go back to the U. S. A. and ask Dr. Charles Mayo to remove it, and that he would get well. Dr. G. came back to the States and went to Rochester, at which time his urine was loaded with sugar. Under novocaine (the only anesthetic permissible because of Dr. G's cardiac condition), Dr. Charles Mayo removed a large substernal goiter. Dr. G. remained in bed for one day, was in the hospital three days and returned to Philadelphia in eight days and resumed the practice of medicine. Dr. Mayo told him that he would gain ten pounds a month for three months. As a matter of fact, he gained fifteen pounds a month for three months. All of his symptoms disappeared within three weeks after his operation—tachycardia, exophthalmos, glycosuria, etc.,—and now, six years later, there is no return of any of these symptoms. It is too bad that Dr. G. had to go as far as Vienna for a correct diagnosis, but we are highly pleased that he was returned to America for his thyroidectomy.

From what I was told of this case I believed that it was one of diabetes, yet true diabetes is a rare accompaniment of

Graves' disease, although alimentary glycosuria occurs in 25 to 30 per cent. of cases, according to Schultze and Hirschl. Crotti says that a number of clinical as well as experimental observations seem to prove that there is an intimate relation between the thyroid and glycosuria.

With probably little or no risk of criticism or contradiction, and with thanks to Gauthier, Kocher, Mayo, et al., goiter is now regarded generally as a surgical disease requiring surgical treatment. But I cannot refrain from asking the question: What has become of the once high and mighty iodine? Of noteworthy antiquity in the treatment of goiter, lauded and heralded for centuries, where is it today? Were its much-vaunted claims exaggerated and false, or did that brute, that hog of a surgeon come along and with one fell blow rob it of its exalted place in goiter therapy? No matter just how it was done, the fact remains that iodine was tried for many years, but in the end was found wanting, and no other drug has been forthcoming to take its place and make good.

The history of this fascinating medical problem proves to us that for many years the goiter itself, *i. e.*, the enlarged thyroid, was regarded as a symptom, an incidental, secondary development in the clinical syndrome of Graves' disease. When, in the light of more modern knowledge of hyperthyroidism and a better pathology, the thyroid gland itself was singled out and held responsible for the toxicosis, the surgeon said the logical thing to do is to cut it out. Kocher and others proved that this logic was good and a new era of treatment of thyroid diseases was thereupon inaugurated. The surgeon's experience grew and his technique improved; he learned when to operate and when not to operate; to extirpate a lobe or only to ligate a blood-vessel; to change his patient from being a poor surgical risk to a good one by "playing for time," by keeping his case in bed, by prescribing X-ray therapy, by administering drugs, and by making practical application of Crile's anoci-association idea. And, thanks to the scientific work of the surgeons of our own land and that of those abroad, the successful treatment of goiter today is pre-eminently surgical and is firmly established.

Speaking now for myself (and I suppose I am permitted to do so with propriety) what I know about goiter and hyperthyroidism I have learned from the masters at whose feet I have had the pleasure of sitting, and at the same time from a

fairly large personal experience which here, as elsewhere, is after all, the best teacher. At least, it is indispensable.

Cases of goiter, when the surgical risk is being estimated, should be carefully individualized and selected. If the patient, male or female, presents the characteristic swelling in the front of the neck, which rises and falls in deglutition (the pathognomonic diagnostic sign of goiter), if this thyroid enlargement is a cosmetic deformity even of minor degree, if it interferes with the prevailing style of dress (or undress), if it is, or is not, increasing in size, and if there are any symptoms of pressure or of irritation, such as a feeling of weight on the front of the neck, dyspnoea, hoarseness or cough—a partial thyroidectomy is justifiable provided there are no symptoms of pronounced thyrotoxicosis. Both the patient and the surgeon can approach such an operation confidently expecting a good result, with relief of previous symptoms and a minimum degree of scarring, a phase of the situation which the feminine subject is quite sure to inquire about in advance.

On the other hand, if there are positive symptoms of hyperthyroidism, viz., tachycardia, headaches, nervousness and tremor (and I mention these symptoms in the order of their relative importance, to my mind) and the more frequently seen eye symptoms—those of Dalrymple, von Graefe and Stellwag—such a case must receive preliminary treatment for several weeks before even a conservative operation is done. And then the surgeon and the patient are taking a chance.

I am sure every surgeon accepts the low-collar incision of Kocher as the ideal one for a thyroidectomy. It gives the best and greatest exposure and plenty of working room is essential to keeping out of trouble—one secret of success in surgery. Several times I have employed Kocher's angular incision for a small, unilateral adenomatous goiter, and it answers nicely in such cases. The scar from the low-collar incision is completely hidden from view by the neckwear of the male subject, while the female art of adornment easily lends itself to hiding the scar by a nicely fitting string of pearls or other necklace.

It is advisable to include skin, subcutaneous tissue and platysma muscle in the flaps thus formed by the collar incision, and after they have been well retracted the prethyroid muscles should be divided transversely at a high level. I believe it to be quite unnecessary to split the deep fascia vertically in

the median line from thyroid notch to the sternum. Moreover, a median vein is apt to be encountered here and splitting this is annoying, to say the least. I wish to emphasize the value of dry dissection in isolating the goiter from its surrounding attachments and the value of dislocating the thyroid lobe from its bed, advice given by that peerless authority, Théodor Kocher. And the surgeon should conscientiously obey the admonition of Charles Mayo to get inside the surgical capsule, as he calls it, and to leave the posterior portion of this capsule in situ, the better to protect the all-important structures, the parathyroids, in the danger zone. As my surgical hearers well know, the entire thyroid lobe of one side, the isthmus and a portion of the opposite lobe may be removed without the risk of precipitating surgical athyroidism or cachexia strumipriva. When resecting the thyroid the surgeon must exercise his best judgment as to how much of the gland may be removed. Mayo says four-fifths may be taken away without fear, and I have followed his advice with safety and success. In one or two cases only have I been obliged to resort to opotherapy because of surgical athyroidism. And then only for a limited period of time.

It is often a question, in my mind, where the disease has invaded the entire gland and which is more or less completely degenerated, whether a larger or a smaller portion of thyroid tissue should accordingly be left for carrying on the proper function. After all, I believe this is a question which must be left to the surgeon's personal judgment: Should most of the gland be removed because it is so seriously and extensively diseased and studded with cysts, or should a larger portion be retained because (again) it is diseased and therefore its secreting function is diminished and altered.

How should this removal be accomplished? 1. By excision, or freeing the entire lobe from its surgical capsule after ligating the superior and inferior thyroid arteries. This method entails more work in the danger zone and hence is more difficult to the operator and is attended by greater risk to the integrity of the recurrent nerve and the parathyroids.

2. By enucleation, or opening into the thyroid tissue to drain cysts and colloid collections and to remove adenomata. Of course, this is a conservative method and is to be recommended when the operator has had only a limited experience in goiter surgery; when the opposite half of the thyroid is atroph-

ied or has been previously removed, *i. e.*, when the operator must be as economical as possible with the glandular tissue; when isolated pathological lesions are present in otherwise healthy tissue; and when the goiter is adherent to its capsule as the result of previous inflammation (strumitis) or traumatism from injections of boiling water or drugs.

3. By resection, first practiced by Mikulicz, which has grown rapidly in favor with American surgeons. This can be either cuneiform ("melon-slice"), or transglandular (trans-frontal). If the latter method is employed accidents to important structures cannot occur, because a layer of glandular tissue, attached to the posterior capsule, is permitted to remain undisturbed, thus protecting the recurrent laryngeal nerve and the parathyroids. Moreover this transfrontal resection has considerable cosmetic value as it distributes the remaining part of the gland (one-fifth or more) on both sides of the trachea, and if only one side is resected and, at some subsequent time it should become necessary to operate upon the opposite lobe, the likelihood of a hypothyroidism is greatly diminished.

Formerly the surgeon feared to leave any raw, thyroid surface in the operation wound because of the supposed risk of precipitating an acute thyrotoxicosis through the sudden absorption of a large (lethal) quantity of thyroid secretion. Time and experience have proved this to be a fallacy and today a large, open, or raw glandular area is frequently permitted to remain, and without untoward effect.

No matter in what special way the enlarged and diseased gland is disposed of, the secret of the technical success in goiter surgery is to proceed systematically with each step, *seriatim*, accomplishing one technical point before taking up another.

But how very different is the treatment of Graves' disease, with its serious hyperthyroidism. Here the surgeon and the internist ought to co-operate from the very start and likewise to pool their efforts after operation. This is my personal custom in these serious cases and I have repeatedly seen the benefit of it. One internal remedy that I know to be of real value in controlling the toxic symptoms, especially the tachycardia and the headaches, is *lycopus virginicus*, the dose of which is five minims of the tincture every three or four hours.

Crile suggests anoci-association in preparing these toxic

cases for operation, and Charles Mayo advises repeated X-ray exposures for the same purpose. I have followed the advice of both of these men in this regard with great satisfaction, although I have modified the anoci-association somewhat. I will explain by reporting a case: Mrs. L. P., aet. 53 years, had suffered for fourteen months with nervousness, headaches and palpitation. Her past personal history was otherwise negative; she is a native of the State of Delaware, and there is no goiter in other members of her family. Examination shows a small, thin, nervous woman, with prominent eye-balls. She winks quite infrequently, and when her eyes are rotated downward the upper lid follows in a jerky, spastic sort of way. There is a tremor of the hands. Her heart is thumping forcibly; pulse, 120. On the front of the neck is a prominent swelling which rises and falls with deglutition and which has the outline of the thyroid gland. The superficial veins overlying this swelling are distended. There is no bruit heard over this tumor, nor is there any expansile pulsation. Diagnosis, Graves' disease.

This patient was put to bed and kept there for two weeks; *lycopus virginicus*, internally, was prescribed; every day or two a few whiffs of ether were administered and occasionally a hypodermic of sterile water was injected. Mrs. P. improved in spirits and felt better physically; her pulse was lowered to 90 and her heart action was much less turbulent. One day we gave her a hypodermic of scopolamin, Gr. 1/100, ether inhalations to full narcosis, and I ligated both superior and inferior thyroid arteries. The effect of this trick-treatment was most successful and the patient made an ideal recovery. Today she is free from all symptoms of thyrotoxicosis, although no thyroid tissue has been removed.

This same plan of preparation I have followed in many other similar cases and with universal success, except in one case to be reported presently.

Getting control of the patient by anoci-association, by rest in bed and by the administration of some indicated drug improves the nervousness, ameliorates the headaches and calms the excited heart. Furthermore, it allays the fears of the patient and promotes a feeling of confidence in the surgeon and in his treatment. And all this is necessary to pave the way for only the ligation of one superior thyroid artery. I believe it ought to be a routine method of preparation in every

honestly toxic case. Several years ago a woman, 30 years of age, with some enlargement of the left thyroid lobe and with moderate but positive symptoms of Graves' disease, was referred to me. The symptoms were *apparently* not severe enough to necessitate a course of preliminary treatment and yet it was evident that even a partial thyroidectomy was prohibited at the time, that it would be toying with the toxic goiter and taking unwarranted chances. Therefore, under nitrous oxide and ether anesthesia I ligated the left superior thyroid artery. Before I had closed the small operation-wound the patient quietly died. I assumed that this was a so-called goiter-heart death; the patient's heart simply stopped.

This case reminds me of another: Mrs. R. N., age 27 years, had been failing in health for five years. Her thyroid gland is moderately enlarged. The circumference of her neck is fifteen inches. She has headaches, occipital and frontal. Eyes are prominent; is hoarse at times and her throat feels constricted. Has much palpitation; no pain. No gastro-intestinal symptoms. Is very nervous. Urine normal. All of these symptoms were made worse by a pregnancy two years ago. Diagnosis, Graves' disease.

This patient was kept in bed for one month, except when she went to a roentgenologist for X-ray treatment. She also received internal medication and her general condition improved considerably. She was then admitted to a hospital where she was detained in bed for a few days and fake etherizations administered. Then, by employing Kocher's angular incision I ligated the superior and inferior thyroid arteries on the right side. The recovery from this operation was satisfactory and the patient's condition improved considerably. Three months later I again put her through the preliminary course of sprouts, administered nitrous oxide and ether and she died on the table before I had time to resect a part of the right lobe.

Perhaps I should have ligated the opposite superior thyroid artery in this case before attempting a resection, and I even wished that the patient and I had been satisfied with the improvement which followed the first ligation.

The death just referred to occurred in October, 1917, and although I have operated upon many simple and toxic goiters since then, I have been more fortunate and have not lost any. Moreover, the ultimate results are very satisfactory. Antici-

pating the presentation of this subject before your Society this evening I have made many inquiries during the past two weeks of physicians and patients who were within reach as to the final result and the degree of cure following operation for goiter. I am pleased to say that invariably the report came back that the cure was genuine, the symptoms of pressure were relieved, the tachycardia had subsided, the patient had gained in weight and the scarring of the neck was insignificant.

It has been my fortune (or misfortune) to operate upon two cases of malignant goiter and, of course, both died. Microscopical examination of these tumors proved that both were of a dual malignant makeup, viz., carcinoma and sarcoma. Crotti says that carcinoma and sarcoma may occur at the same time in the thyroid gland, but it is exceedingly rare.

In one of these cases I had to perform tracheotomy. The woman persisted in pulling out her tracheal tube and died from respiratory obstruction. The pathological report of her goiter showed it to be a combined carcinoma and sarcoma.

THE REPLACEMENT OF MORPHINE IN SURGICAL PRACTICE WITH A REPORT OF 465 CASES.

BY

JOHN HUBLEY SCHALL, A.B., M.D., F.A.C.S.

(Read before the Essex County (N. J.), Medical Society, Montclair, N. J.,
October, 1920.)

IN spite of the drawbacks which are recognized as attending the use of morphine, this drug, either alone or in combination, has been, until recently, the sheet-anchor of the surgeon in comforting psychical and physical irritability and suffering prior to and following operations. While we have been compelled to use it, we have done so with a full realization of the disturbing and sometimes dangerous effects and after-effects often produced by it, especially the foundation of an uncontrollable habit.

When I became acquainted with the observations of Burgi as to how an absence of the undesirable by-effects of morphine could be attained, and learned that in such institutions as Bier's Clinic, pantopon had largely superseded morphine in surgical

practice, I undertook to investigate the matter by conducting a series of experiments with a view to discontinuing the use of morphine in our own hospital, if our observations should warrant it.

Prof. H. Salih, of the University of Berne, introduced pantopon in medicine in 1909. This drug contains the total alkaloids of opium as soluble hydrochlorides in the proportion of 50 per cent. morphine, 30 per cent. minor opium alkaloids, 10 per cent. water of crystallization, and 10 per cent. halogen acid. It is free from resins, meconic acid, wax, gum and all inert substances. It is soluble in cold, and very soluble in hot water. Injections are not followed by local irritation.

Our first series of 465 cases in which pantopon was used, has justified our expectation. I quote a few histories as typical of the character of the work carried on and of the results obtained. In a hospital where a large number of charity cases are treated it is not to be wondered at that a high percentage of the operations performed refers to repair of accidents. In such cases, as well as in those referred from the pathological wards, pantopon gave us excellent results superior to those we have been accustomed to from the administration of morphine or morphine and atropine.

The sedative action of pantopon and the psychic control rendered possible by it were observed in the comfortable mental condition and appearance of the patients, the fine capillary color of their skin, etc., while they were being brought to the operating table; the anesthesia progressed with a marked diminution of the quantity of anesthetic used; also in the continued condition of the patients during anaesthesia and the noticeable freedom from depression or shock following operation.

Our experience has shown us that with pantopon the post-operative condition of patients is markedly improved compared with what we had been accustomed to. We uniformly observed:

1. An absence of cardiac or pulmonary change, as there was apparently no depressant action.
2. A normal free secretion of urine.
3. Rare occurrence of nausea or vomiting.
4. An absence of ballooning-up, or tympanitic condition of the intestines.

5. Flatus was voluntarily expelled and rectal tubes were little used.

Some cases received pantopon in combination with atropine, while other cases received pantopon alone. In either case the results were much superior to those obtained through the administration of morphine or morphine and atropine.

Even in cases complicated by cardiac, pulmonary and renal lesions, the same undisturbed conditions were attained and, perhaps, most important of all, while most of the cases received repeated doses of pantopon after operation, the effects of which were clearly shown in an improved psychic control, we never encountered difficulties in discontinuing injections or oral administration when for our purposes they were no longer needed.

Post-operative vomiting occurred in only 15 of our 465 cases, and we are inclined to believe that too much time elapsed in these particular cases between the preliminary injection of pantopon and the beginning of the ether narcosis.

We would like to state that our observations on the first series of 110 cases were completed before the article from Johns Hopkins Pharmacological Laboratory appeared in print, which on the basis of pharmacological experiments on the action of the opium alkaloids reaches conclusions similar to our own.

The first series of cases required an average of three to four ounces of ether, while the average of 1,000 cases previously operated on in our hospital shows an average of six ounces to maintain anesthesia.

The technique most usually followed was: One hour before operation one-third grain pantopon was injected and this dose was repeated thirty minutes before operation; after completion of surgical interference an injection of one-sixth grain pantopon was given, followed by one-third grain pantopon every six hours for 24 hours. Accident cases brought in from the street received larger doses of pantopon when necessary.

While we were compelled to use morphine before and after our gastro-enterostomies, we noted that the pyloroplasm which occurred in many cases lasted hours as a result of the drug. This complication was accompanied by vomiting of blood-tinged mucous. The effect of pantopon on the pyloric sphincter is just the opposite. These facts have been demonstrated by Roentgen-ray studies.

In a series of 39 operations upon the stomach in which pantopon was used, four cases suffered from nausea and slight vomiting after operation.

The following case histories may serve as average examples of results obtained. Clinical data which have no bearing on our subject are omitted.

No. 585.—Male, aged 34 years. Operation, excision of caecum. Pantopon grn. $\frac{1}{3}$ an hour before operation; repeated after operation; no nausea or vomiting followed.

No. 572.—Female, aged 26 years. Operation, appendectomy complicating pregnancy. Pantopon grn. $\frac{1}{3}$ half hour before operation. Vomited once an hour after operation; none thereafter.

No. 549.—Female, aged 19 years. Operation, appendectomy for gangrene and perforation of appendix. Pantopon grn. $\frac{1}{3}$ an hour before operation. No vomiting followed.

No. 492.—Male, aged 35 years. Operation, nailing fragments of fractured and dislocated ankle. Pantopon grn. $\frac{1}{3}$ before operation; slight nausea.

No. 489.—Male, aged 45 years. Operation, amputation of three fingers. Pantopon grn. $\frac{1}{3}$ before operation. No emesis following; comfortable all night.

No. 326.—Male, aged 72 years. Operation, gastrostomy. Pantopon grn. $\frac{1}{3}$ an hour before operation; no nausea or vomiting followed.

No. 323.—Female, aged 19 years. Excision of upper tibia for exostosis. Pantopon grn. $\frac{1}{3}$ before operation; no vomiting followed.

No. 273.—Male, aged 49 years. Operation, external perineal urethotomy. Pantopon grn. $\frac{1}{3}$ before operation. No nausea or vomiting followed. Pantopon was repeated for excessive pain.

We make it a rule to dispense with all anodyne medication as early as possible.

The established superiority of the indicated remedy in treating post-operative complications has been emphasized many times during a considerable experience in surgical work covering a period of twenty years; and next to aseptic technique we believe that proper prescribing has contributed more than any other one thing to the rapid recovery of the patient.

SUMMARY.—We replaced morphine medication in our surgical wards by using pantopon.

The sedative effect of pantopon was noticeably greater than that of its morphine equivalent. Respiratory and cardiac depression were far less marked with pantopon.

Post-operative nausea and vomiting and constipation were much reduced through our new method of procedure.

Patients suffered no inconvenience when administration of pantopon was discontinued.

For valuable aid and collaboration in the work, I am indebted to my associates, Drs. F. B. Pierson and J. Z. Raily.

SOME THOUGHTS ABOUT TONSILLITIS.

BY

EDWIN C. BLACKBURN, M.D., LOCK HAVEN, PA.

(Read before the Homœopathic Medical Society of Pennsylvania, Sept. 22, 1920.)

WE have in tonsillitis a disease in which we all should be much interested. In recent years many obscure cases and conditions have cleared up and satisfactory results obtained by more thorough study of tonsillar conditions. Acute tonsillitis in changeable seasons in our part of the State makes up a goodly percentage of our work. Fever, general aching, chilliness, furred tongue should be sufficient symptoms to cause any intelligent physician to examine the throat. Many times the sore throat is not perceptible to the patient until the second day of the disease. To be called into a case of tonsillitis fully developed many times taxes one's power of diagnosis. The microscope has been an aid, but to my sorrow, in two cases a negative report has not meant that diphtheria did not exist. The temperature in acute tonsillitis usually runs high and in many cases I have trusted my differential diagnosis almost entirely on that point alone. But few cases of diphtheria have I found with temperature of over 102. One attack of tonsillitis predisposes to future attacks; also enlarged and diseased tonsils are family pathological conditions. Normal tonsils are in about as unsafe a position today as normal ovaries were fifteen years ago; I recently saw a report from one of our island hospitals where thirty-seven tonsillectomies were done in one single day. Are we faddists, are we operating

patients for the fees, or are we studying our cases individually?

A normal tonsil is a safeguard to disease; therefore, let us not try to compete in number of operations with those who are removing good, bad and indifferent tonsils. School examinations, no doubt, have had much to do in educating the laity and many more cases are brought to our notice than heretofore. I do not mean to decry such examinations for much good has resulted. All diseased tonsils reported to us should not be considered for operation alone, but treatment.

Dr. J. L. Davis believes that investigation of toxic absorption and transmission in which the chemist's aid is summoned will yield interesting data. He believes the poison of putrefaction in diseased tonsils to have a very direct action upon the liver or its biliary secretions ultimately producing intestinal autointoxication with its train of symptoms. Through this process diseased tonsils are a common cause for cold in the head, bilious headache, intestinal indigestion, cardiac conditions, all through toxic influence. He believes that the majority of tonsils are diseased and that everyone, whose tonsils are in any measure diseased, would be healthier, stronger and happier without them.

What conditions, then, should guide the physician in recommending the removal of tonsils? First. Repeated attacks of tonsillitis. Second. Large hypertrophied glands interfering mechanically with breathing and hearing. Third. Those showing inflammation around tonsils. Fourth. Rheumatic symptoms with tonsillar inflammation. Fifth. Crypts unable to empty. Sixth. Those found to be a culture or focus for toxins. Seventh. Many cases of chronic otorrhoea.

No operation for removal of tonsils should be done for at least thirty days after an acute attack. The danger of liberating toxins during operations is greater after an acute condition; all temperatures should be taken, an analysis of urine be made just prior to enucleation.

The writer has recently had two cases of nephritis following directly after the removal of tonsils. Let us not look upon tonsil removal as a simple matter. When tonsilectomy is indicated and properly performed most satisfactory results are obtained.

CONSTIPATION: ITS CAUSES AND TREATMENT.

BY

CHARLES H. SEYBERT, M.D., PHILADELPHIA.

(Read before the Pennsylvania State Society, Sept. 22, 1920.)

CONSTIPATION is a symptom or condition met with quite frequently in infancy and early child life, the relief of which is at times wrought with difficulties.

To recognize constipation one of necessity must needs be familiar with what is normal both in number and consistency of the intestinal discharges, in the various periods of early life. During the first year the average number of evacuations is from 2 to 3 daily in breast fed infant, and from 1 to 3 in the artificially fed. The consistency is about that of mush though somewhat greater in the artificially fed.

ETIOLOGY.—The causes of constipation are extremely varied and numerous. The following classification may suffice for diagnostic convenience:

1. *Constitutional*.—Including heredity, thyroid, insufficiency and backward development. The part heredity plays as a causative factor is a minor one; there is no doubt, however, that some children exhibit a constitutional tendency to constipation. Thyroid insufficiency as seen in cretinism is a possible cause, and should not be overlooked, as may happen in cases where the characteristic stigmata are slight or absent. Backward functional development of the digestive glands, such as the liver and the glands of the intestines may be a contributing cause in some infants.

2. *Mechanical*.—As a result of a long colon, intestinal lesions and obstruction from pressure. The large intestine, especially the sigmoid flexure, is relatively longer than in later life and with a correspondingly longer mesentery allows of more bends and kinks, which in this way may provoke constipation. There may be congenital lesions involving some portion of the intestines such as a Jackson's membrane, partial stenosis or peritoneal adhesions as a result of some inflammatory condition before or after birth. Hirschsprung's disease is also another cause of constipation. Then we may have a tumor parenteral in origin acting as a mechanical cause from pressure.

3. *Reflex or Spasmodic*.—From fissure of anus, hemorrhoids and large, hard stools. Mechanical irritation as seen in fissure of anus or hemorrhoids may produce a spasm of the intestinal musculature resulting in the spasmodic form of constipation. The more frequent cause, however, is the passage of large, hard stools.

4. *Partial Paralysis*.—As the result of the use of opiates or the acute infectious diseases. Constipation as the result of peristaltic paralysis from impaired innervation probably explains the symptomatic constipation met with in the acute infectious diseases. The condition is also seen as the result of the use of paregoric or soothing syrups.

5. *Dietary*.—From too weak food, too little fat, excess of fat, heating of milk and too little solids. This group includes by far the commonest causes of constipation. The milk may not only be insufficient in quantity but also too weak in composition, as the result of which the food is so completely absorbed that the residue is not sufficient to form the normal amount of fecal matter. Insufficient fat may cause constipation from lack of bulk of the movements, of which fat is the principal. A more common cause particularly in the artificially fed is an excess of fat, here we have no diminution in the bulk or the number of evacuations, but the stools are large and hard, of light or gray color and consisting largely of insoluble soap. Excess of starch or sugar may prove a cause but in this instance the condition is induced by muscular weakness as the result of prolonged fermentation. The heating of milk, especially if it be boiled or sterilized instead of pasteurized, may be a cause of constipation, although not actually proven. A very prevalent cause in older children is the giving of insufficient amount of cereal, cooked fruits, and green vegetables; another dietary fault seen mostly during the second year is the giving of too much milk.

6. *Muscular Weakness or Atonic*.—From prolonged indigestion, malnutrition, rickets, lack of exercise, abuse of laxatives and lack of proper training. This group is usually secondary to a variety of causes, it forms the atonic type of constipation, the result of muscular weakness or atony. Prolonged indigestion through excessive gas formation and intestinal distention is the commonest cause of atonic constipation. In malnutrition and rickets the abdominal and intestinal muscles participating in the general wasting, results

in muscular weakness and gives us another very common cause of atonic constipation. Lack of exercise inclines to general muscular atony in which the intestinal muscles are also involved, this cause is not only found in older children but in infants who are not allowed to kick and use their limbs.

Such purgatives as castor oil, rhubarb and aloes while of temporary benefit under certain indications, are very conducive to constipation if habitually used. Another somewhat prevalent cause is lack of training. Even during infancy it is possible to train the child to empty the bowel at regular and proper times; this can be accomplished when the infant is able to sit up; it should be placed upon the receptacle or vessel at appointed times during the day and the bowel stimulated, if need be, by a mild suppository such as made of soap until the habit is established. Older children should be taught to heed the calls of nature and should be made to go to toilet at regular times each day preferably after breakfast.

TREATMENT.—The treatment of constipation while mainly dietetic should be directed to the cause. Drugs should be resorted to only when other measures fail.

DIETETIC.—In the breast fed something may be accomplished through the mother in the way of diet, rest, exercise and avoidance of psychic disturbances to improve the quality of the milk, and to overcome any deficiency present. In the bottle fed, when the quantity is insufficient or the composition weak, changes should be made cautiously with the view of finding the combination of the food elements best suited to the individual needs, at the same time carefully watching for any signs of indigestion. The ideal which one should seek to attain is a food combination in which all the elements (fat, proteins and carbo-hydrates) are reasonably proportioned and in which no one element far exceeds the other. It is not a good plan in a baby who is gaining in weight and digesting its food well to effect much change in the composition of the formula, and it is particularly dangerous to make much increase in the quantity of milk fat simply to overcome constipation, lest a fat intolerance be produced which far out-weighs the mischief caused by constipation.

In constipation the result of fat excess it may be necessary to replace temporarily the whole milk with skimmed milk and increasing the sugar. The fat tolerance should then be determined as soon as possible by substituting one or two

ounces of whole milk for the skimmed milk, and if this is found to agree, the fat gradually increased by the substitution of one or two ounces of skimmed milk every second day until the point of tolerance is reached.

In cases where cane or milk sugar have been used it may be well or advisable to resort to one of the dextrimaltose compounds, particularly those containing a high percentage of maltose and potassium carbonate. In other cases a change from barley or wheat flour water to oatmeal water as the diluent may be beneficial. Substituting raw milk for milk which has been boiled may correct the trouble. In some cases where the constipation is distressing and other dietetic changes fail, a week or two on one of the malt soups may help. Constipation, the result of food rich in starch, may be benefitted by reducing the amount of starch or dextrinizing it with some diastatic agent such as cereo or one of the many malt preparations. When the infant is old enough (5 to 6 months) the addition of orange or prune juice and strained vegetable soup to the dietary is very beneficial.

During and after the second year there is more leeway for dietetic treatment. The quantity of milk given may be slightly reduced and solid food increased. The coarser farinaceous foods, especially oatmeal, are valuable. Graham or whole wheat bread may be substituted for white, and graham and bran crackers for zwieback. Meat broths and beef juice are good because of the laxative effect contained in their salts and extractives.

Fruit is a very useful adjunct in overcoming constipation and may be given as a baked or scraped apple, apple sauce, prune pulp, orange or grape juice. The green vegetables such as spinach, string beans and asparagus tips well cooked and strained are not only wholesome but laxative in their effects.

Honey, one or two teaspoonfuls daily and free use of butter, providing it causes no digestive or metabolic disturbances, may prove valuable. Water should also be given freely between meals.

MECHANICAL.—Massage is helpful as a routine measure if done by one who is familiar with its manipulations. It is best given for 5 or 10 minutes at night upon retiring and in the morning before arising.

MEDICINAL.—Where dietary measures fail resort must

be had to drugs. The mineral oils, of which there are several upon the market, have given very gratifying results. They simply lubricate the intestinal wall and cause the contents to slip along more easily. They should be given upon an empty stomach in 1 to 2 teaspoonful doses once or twice daily to infants and one tablespoonful daily to older children. The only inconvenience in their administration is a tendency to leak through and soil the clothing if too much be taken; this may be obviated by reducing the amount.

Olive oil either by mouth or rectum has proven valuable, it also possesses food qualities and is especially useful in marantic infants. It may be given in $\frac{1}{2}$ to 2 dram doses by mouth three times daily either plain or in grape juice. In the presence of large, hard stools it may be used to better advantage per rectum, from 1 to 3 ounces of the oil is injected high into the bowel every evening as the infant is put to bed, and allowed to remain over night; as a rule a substantial movement the following morning is the result. Should such not be the case it may be supplemented by a soap and water enema. As the movements show a tendency toward becoming spontaneous the frequency of the injections may be lessened.

Agar.—Agar as such or as Regulin is useful in some cases. It acts by absorbing moisture through the intestinal mucosa causing it to swell and thereby not only adding bulk to the intestinal contents but making them more liquid. It may be administered in stewed fruit or cereal in 1 to 3 dram doses once or twice daily.

The best laxative for an infant is milk of magnesia. It is better to divide the daily amount so that it is given in all the food taken by the infant than to give it in a daily single dose, this has the tendency to make all the food more laxative and in reality stimulates dietetic treatment. In older children the two best laxatives are phenolphthalein and cascara sagrada, These are given preferably three times daily after meals. If satisfactory results are not obtained in this way they should be given at bed time. The dose of phenolphthalein is from 1 to 3 grains and of cascara from $\frac{1}{2}$ to 2 grains of the extract, or from 5 to 20 drops of the fluid extract.

Suppositories are best adapted to the form of constipation in which the seat of trouble is low down in the intestines, being of no use where the atony is confined to the upper bowel. Gluten and soap suppositories are the least irritating.

Glycerine suppositories, because of their irritating qualities and tendency to aggravate the condition, are contra-indicated in chronic constipation.

Enemata are not advisable in the treatment of constipation in general, they are, however, useful in constipation from temporary cause such as the symptomatic constipation of acute disease. The ordinary soap suds enema is best in such cases. When the stools are hard and dry the injection of an ounce of sweet oil, followed in half an hour or so by a soap and water enema, may facilitate their passage.

Homœopathically, the most useful and most frequently indicated remedies are aluminia, hyronia, nux vomica, opium and sulphur. Other remedies found useful are graphites, lycopodium, plumbum, calcarea carb., calcarea phos., causticum, phosphorus.

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THE DIET AS A POSTOPERATIVE FACTOR IN GASTROINTESTINAL DISORDERS.—In the past a most illogical condition of affairs has existed in relation to gastrointestinal surgery. The condition of which we complain rests upon the fact that when a surgical operation has been performed upon the stomach or intestines, operator, physician and patient alike have all assumed that the operation has been the entire factor in the treatment of the patient and all other care has accordingly been neglected. The fault is such a silly one that to mention it is to correct it. Because of this, we take occasion to cull from the paper by Dr. Levy the following suggestions as to diet. These suggestions also have the added advantage of giving at least one definition of fluid, soft and semi-solid diets, respectively:

"Fluids: Water, whey, strained gruels, lemonade, orangeade, orange juice, plain or malted milk, chicken broth, creamed soups without vegetables.

"Soft Diet: All foods in the liquid diet, eggs boiled at least 3 minutes, bread, potatoes (baked, boiled or mashed), peas, milk toast, boiled cereals, except oatmeal, such as rice, farina, cream of wheat, hominy, wheatina; puddings, such as bread, rice, tapioca, corn starch, sago containing no raisins; custard, ice cream, gelatin preparations, strained jellies, broths containing noodles or rice.

Semi-solid: Foods in the above list, chicken, broiled fish, except salmon and mackeral, cream or pot cheese, macaroni."—*Medical Record*, Jan. 22, 1921.

EDITORIAL

ORTHOSTATIC ALBUMINURIA.

WHEN albuminuria occurs in a young individual the point which must be decided is whether we are dealing with a case of nephritis or whether the albuminuria is purely a functional and consequently a temporary disturbance. There is a form of albuminuria which is not uncommonly encountered at the time of adolescence which, if carefully studied, proves to be of functional origin and unless the true nature of the condition is recognized a serious error in prognosis may be made and inappropriate treatment instituted.

When Richard Bright in 1827 established the fact that the presence of albumin in the urine was an indication of inflammatory changes in the kidney and that patients who were afflicted with an albuminuria showed the signs of a nephritis at autopsy or developed the characteristic clinical manifestations of renal disease, it was believed that every case of albuminuria was a case of renal disease, or Bright's disease. Even at the present time this attitude is prone to be held by many clinicians without searching for further evidence of renal pathology outside of the presence of albumin in the urine.

For many years, however, it has been patent to the careful clinician that albuminuria does not invariably spell Bright's disease. Thus, Leube repeatedly discovered albumin in the urine of soldiers after physical exertion; the albumin disappeared after rest and was never present in the urine voided in the morning on rising. Pavy made the discovery that among children and young adults cases of albuminuria could be found in which the albumin was only present at intervals, or cycles, and he designated this condition as "cyclical albuminuria." Heubner later showed that the albumin appeared when the erect position was assumed and that it was the change from reclining to the erect position, particularly in the morning hours which was responsible for the albuminuria. The urine voided when first arising in the morning was free from al-

bumin in his cases while that voided several hours after being up and about gave a strong albumin reaction. Realizing the importance of posture as an etiological factor he called the condition "orthostatic albuminuria."

The etiological relationship of posture to this form of albuminuria has been fully established by the observation of numerous clinicians. Jehle, however, insists that posture is not the important factor but that a lordosis, involving especially the upper lumbar vertebra, is the actual cause of the condition and he has coined the term "lordotic albuminuria" as a substitute for postural and orthostatic albuminuria. While the majority of patients with an orthostatic albuminuria present a lordosis as well as other evidences of physical inferiority, such as the stiffer type of physique, nevertheless we encounter many children and young adults with these physical defects who do not have an albuminuria.

The evidence of organic renal disease is lacking in these cases. There are no cardiovascular changes, in fact, the blood pressure is abnormally low, especially the diastolic. There is no edema of the extremities, ocular disturbances nor is uremia to be feared. The prognosis is good. As the child's physical condition improves the albuminuria improves, in fact, we are justified in promising the parents that the child will "grow out of the condition" in the literal sense of this phrase.

The treatment of orthostatic albuminuria must, therefore, be a building-up process and a diet rich in milk, eggs, fats, an abundance of green vegetables and meat in moderate amounts is indicated. Fresh air, out-door exercise and corrective gymnastics if lordosis and enteroptosis be prominent symptoms are to be followed out. Remedies are not required for the albuminuria; casts are seldom found in the urine. Such constitutional remedies as calcarea phosphorica, phosphorus and arsenicum are useful, and iron if the child is anemic.

INSTITUTE POLICIES.

ALTHOUGH the Institute meeting is still three months away, the present is a good time to mention some of the matters that are likely to be brought up for consideration. We

have already had some words over Federation, concerning the plans for which we are as much in the dark as ever. We regret this exceedingly as the details are of such paramount importance to our organization that we should have something well systematized for us in advance. Equally important is the matter of financial necessities of the Institute. The affairs of the association have been managed with economy and the officers have worked hard and loyally on small salaries, and even then the income is scarcely sufficient to meet the current budget, much less to pay for certain new enterprises which it is evident must be undertaken in the near future. The Society has adopted the expedient which, of course, can only be good for this year, of assessing all members \$5.00. Assessments, however, cannot be made every year without producing dissatisfaction. It has been proposed to raise the dues, and this always will raise the deuce, and lessen our membership, and thereby give us no increased economy. We see nothing ahead of us but endowment and believe that that must be the final decision. Endowments need not come from the medical profession alone. There are plenty of laymen who are sufficiently interested in us to pledge the small sum necessary to place Institute finances on a permanent footing. A third important matter is the consideration of National Homœopathic Clinic Day. Taking this day as carried out in 1920, it may be regarded as a pronounced success, excepting in a few spots, and those in small hospitals in isolated counties. Wherever a hospital was located in a district where we had a medical organization, that is a local society, there can be no question about the value of the clinical service to the physicians who attended and to the respect accorded our school of medicine.

We may schematize the above subjects for study as follows:

I. FEDERATION.

- a. Shall there be a special organization of the Institute to be called, "Congress of States" or some other title?
- b. If so, of what shall it be composed? How shall the delegates thereto be chosen?
- d. Shall there be a fixed representation of each State regardless of size, or shall the large States have greater representation?
- e. Shall the federating body take over the business of the Institute; and if so, to what extent, limited, or unlimited?

- f. What power shall it have in defining Institute policies?
 - g. The value of organization in general, and to the Institute in particular.
 - h. The value of organization to a body which may be called relatively, a "family" bound together not so much by business or political motives, as by the idea of propagandising a principle.
- II. FINANCES. It being admitted that the Institute income is insufficient to meet its expenses, the following questions become pertinent:
- a. Shall the Institute retrench and remain a "small town" concern, or shall it increase its activities in keeping with the dignity of a national organization?
 - b. If the latter, the income must be increased, and it may be increased by:
 - I. Assessments.
 - II. Increased dues.
 - III. Endowment.
- III. NATIONAL HOMOEOPATHIC CLINIC DAY.
- a. Was it a success or a failure in 1920, and shall it be continued?
 - b. What were its defects and how shall they be remedied?

CURRICULUM WORKERS.

ON several occasions we have commented on the expressed wishes of certain specialists for the introduction of new branches or chairs into the medical curriculum. From one quarter we are requested to have a professor of Syphilis, from another, a chair of Tuberculosis. We know of an institution that has been solicited to have a professor of Diabetes. Where the thing is likely to end no one can say—probably when all the physicians in the Commonwealth are made professors or lecturers in their nearest medical school.

Now comes a request for a course of instruction in Preventive Pediatrics and Child Hygiene, the backing of which is very strong. With this request is an outlined course of lectures involving eight main subjects and nearly one hundred rubrics. We would not contend for one minute that the subject matter provided for in this outline is not valuable. We do contend, however, that it is entirely out of place in the

medical curriculum of a four years' course of medicine, and that its introduction there would displace instruction in the fundamental principles of medicine and surgery. The subject in its various details is one for post-graduate instruction or for physicians who intend to devote themselves to this special line of work. This tinkering with the curriculum by the idealists and the theorists reminds us very much of the story of the man who stuttered, and who went to a professor of speech defects to be cured. He finally progressed until he was able to say fluently, "Peter Piper picked a peck of pickled peppers," and the Professor said, "You are getting along very well, are you not?" "Y-yes, b-but that's a h-hell of a th-thing to work into a g-g-general c-c-conversation."*

Really, it looks as though our demands upon the medical student are becoming unreasonable. We are asking him not to possess the individual knowledge of the professors of anatomy, physiology, chemistry, pathology, etc., but we are actually demanding that he shall store within his cranium the accumulated knowledge of years of study of the entire faculty, and then condemning him if he fails to attain such an unreasonable standard.

TOWARD THE PREVENTION OF DIABETES.

It is common knowledge that there exists a relationship between obesity and several diseases. Physicians advise against the accumulation of too much fat, as a preventive measure against these diseases. In fact, "Eat less and exercise more," is so stereotyped that it loses its force in many instances. On the other hand, it is as difficult for the portly physician to preach against corpulence as it is amusing to have a bald-headed barber recommend a cure for alopecia. Nevertheless, there remains the fact that among the diseases associated with obesity is diabetes. Joslin recently (*Jour. Amer. Med. Asso.*, Jan. 8, 1921, Vol. 76, No. 2, p. 79) presented a view bearing upon this subject, which view is comparatively new and very worthy of our consideration.

By statistical studies, Joslin has found that persons over normal weight in the latter half of life are more liable to

*Several years ago we read in one of our magazines a strong appeal for having a professor of speech defects in every medical college in the country.

diabetes than are those who are slim. He considers diabetes from the epidemic viewpoint and acknowledges that, even eliminating the possibility of an early and accurate diagnosis resulting from modern methods, the disease is actually on the increase, and not only apparently so, because of the methods now at hand. This increase, along with the fact that there are approximately no less than half a million diabetics in these United States, has called forth Joslin's plea for prevention. The insidious nature and the wide-spread occurrence of diabetes, makes it difficult for us to see it from the epidemic viewpoint. Its classification among those disorders which are regarded as almost incurable is a source of pessimism, as contrasted with the acute infectious diseases of the early decades of life.

Since obesity is a factor in diabetes, why not preach against obesity, with a thought of diabetes, as a means of at least eliminating one cause or tendency? In this connection, Joslin hints that the modistes and tailors do more for humanity than do physicians. It is fortunate fashion decrees lithe-ness and fortunate, too, that obesity is generally known to affect the heart. The fear of "Being cut right down in the midst of his sins," has driven many a man from the dinner table to the golf links and incidently away from the danger of diabetes.

Unfortunately, the results of an "anti-fat" propaganda would not be immediately forthcoming, because the optimum age of the disease incident must be gained by the populace, and that may require years. However, we may accomplish much for coming generations, if we adopt this slogan: DIET NOW AND SAVE DIETING LATER.

OCULAR COMPLICATIONS OF PERIPHERAL EPILEPSY.—J. M. Penichet reports the case of an epileptic who had only a few sensations of light before his attacks and a contraction of the fields following, but after every fit there was a profuse hemorrhage into the anterior chamber and subconjunctival ecchymosis. The blood disappeared completely in from 20 to 30 days. Another case showed paresis of the orbicularis with ptosis and complete anæsthesia of the skin in the infraorbital region. These disappeared regularly after each seizure.—*American Journal of Ophthalmology*.

GLEANINGS

MEDICINE

Conducted by CLARENCE BARTLETT, M. D.

THE SIGNIFICANCE OF THE BACTERIA FOUND IN THE THROATS OF HEALTHY PEOPLE.—Bloomfield's present investigation is no less interesting than those that have preceded it. Discussing the various experiments he says, "It appears that cultures made repeatedly from the throat of the healthy individual over a considerable length of time reveal two groups of organisms. In the first place there is a group—non-hemolytic streptococci, and Gram-negative cocci—which is constantly present and seems to constitute the true normal flora of the throat in the sense of actually living its complete life history in that environment. In addition to this group many other organisms may be recovered in cultures from normal throats but their presence seems to be only transient. They disappear within a few days, as a rule, just as foreign organisms do when experimentally introduced. It is possible that some of these organisms such as pneumococci and influenza bacilli are really constant inhabitants, but are present in such small numbers that they were missed in some of the cultures, but this seems unlikely. We may picture, therefore, in addition to the true basic flora a constant influx of various bacteria from the skin, the nose, the air, and from external objects. These, unless they are pathogenic and set up disease, seem to be promptly disposed of by the normal protective mechanism of the upper air passages (chiefly mechanical flushing). The idea, then, that bacteria in general, when introduced into the upper air passages are likely to colonize and live there is erroneous. It is now clear, both from these studies and from the experimental work, that the normal surfaces of the upper air passages afford a very unfavorable environment for foreign organisms, both pathogenic and non-pathogenic, and that special conditions are needed to make possible their prolonged or permanent presence. Such conditions as a rule consist of the production of disease, or at least a focus of diseased tissue in which the organisms may colonize.

"With these points clearly in mind it seems that one is in a much better position to study the bacteriology of infections of the upper respiratory tract. Knowing the normal flora, and the possibility of transient invaders, unessential organisms may be readily discounted. A study of the bacteriology of colds is now being taken up from this point of view."

He then presents the following conclusions:

1. The organisms present in the throats of healthy people, as revealed by this method, fall into two groups: (a) The true normal flora including non-hemolytic streptococci and Gram-negative cocci, and (b) Pathogenic or non-pathogenic organisms which are accidentally introduced and are present usually only a short time in a given individual.

2. A true picture of the normal flora is obtained only by making repeated cultures from the same individual.—*Johns Hopkins Hospital Bulletin*, Feb., 1921.

EXPERIMENTAL INOCULATION OF HUMAN THROATS WITH AVIRULENT DIPHTHERIA BACILLI.—In view of the many discussions concerning the presence of diphtheria bacilli in the throats of healthy people the summary of the work of Moss, Guthrie and Marshall and their conclusions are of more than passing interest.

From the results of the experiments herein reported certain facts seem sufficiently important to warrant repetition for the sake of emphasis:

(1) The carrier state was easily produced in human beings by inoculation of the throat with avirulent diphtheria bacilli.

(2) When thus produced the carrier state lasted for a long time; two of the carriers still harbored a virulent diphtheria bacilli after 15 months.

(3) The previous administration of diphtheria antitoxin subcutaneously did not prevent the lodgment and growth of the organisms.

(4) Inoculation of avirulent diphtheria bacilli into the throats of human beings did not produce: (a) clinical diphtheria; (b) any subjective symptoms; (c) any objective change in the appearance of the throat.

(5) The results of the guinea-pig test for virulence were confirmed when thus tested with human beings.

(6) No cases of clinical diphtheria developed among the associates of these artificially produced "healthy carriers" of avirulent diphtheria bacilli.

(7) When isolated in pure culture after prolonged sojourn in the human throat the bacilli were not altered in morphology or in their staining or cultural characteristics.

(8) The bacilli showed no tendency to become virulent as a result of this type of animal passage, either in the carriers who had received diphtheria antitoxin or in those who had not.

(9) Spraying the nose and throat with gentian violet in a strength which could be tolerated seemed to be without effect in eradicating avirulent diphtheria bacilli.

The results of this experimental inoculation of the throats of human beings with avirulent diphtheria bacilli are in entire accord with those obtained in our previous work with healthy diphtheria bacillus carriers. The same general conclusions drawn from our earlier work have merely been confirmed and somewhat amplified.

CONCLUSIONS.—1. Avirulent diphtheria bacilli retain their characteristics despite long residence in the human throat or transfer from one human being to another. 2. Avirulent diphtheria bacilli are devoid of pathogenic importance for man. 3. The carrier of avirulent diphtheria bacilli does not constitute a menace to the health of the community.—*Bulletin of the Johns Hopkins Hospital*, Feb., 1921.

INFECTIOUS CHARACTER OF LATENT SYPHILIS.—E. Friedlaender discusses the dangers of latent spirochetosis and its treatment by the intravenous route. The efficiency of intravenous treatment of general paralysis and late syphilis has been proved by practical experience, in Friedlaender's work and that of others, besides resting on solid theoretical foundations, for it has been shown that the spirochetes in a large number of cases are carried in instalments by the hematogenous route. Their seat of predilection is especially in the paralytic brain, in the walls of the large blood vessels and their immediate surroundings, where they can often be demonstrated in enormous masses. Upon these reliable findings is based the new intra-arterial procedure,

in which salvarsan is injected directly into the common carotid artery. The results which have been accomplished by Knauer, the originator of this method, again serve to show that the control of the late syphilitic affections of the central nervous system by the hematogenous route is actually the most promising mode of treatment.

All syphilitic patients, by no means only those having latent syphilis and later developing paralysis, must be regarded as the carriers of dangerous bacilli. This viewpoint is not only theoretically well grounded on the latest findings, but it also possesses the greatest importance for practical hygiene. The fact must be emphasized that the spirochetes still existing in the body in latent syphilis represent a permanent danger for the carrier of the spirochetes himself as well as for his environment. Keeping in mind that all the affections which were formerly described as metaluetic and which according to current investigations simply represent spirochetoses of the central nervous system, are derived from an originally latent syphilis, the source of dangers from a latent spirochetosis must be estimated as even greater than the dangers from a latent tuberculosis for the carrier as well as for his surroundings. It is highly probable that the number of extragenital transmissions through individuals having latent syphilis is much greater than was hitherto assumed, although the existence of such a connection can rarely be positively established. It must therefore be the physician's endeavor to institute abortive treatment not only in all recent cases of syphilitic infection, as far as possible, but also to discover all latent syphilitic patients and to subject them to energetic treatment, until the clinical and serologic findings justify the assumption that they no longer harbor the spirochete.—*The American Journal of Syphilis*, January 1921.

EXPERIENCES WITH SILVER SALVARSAN.—A comparison of the effect of the various salvarsan preparations meets with difficulties, even on the basis of relatively large material. Working in the Breslau University Clinic for Skin Diseases, Wiener endeavored to obtain the most favorable conditions for such a comparison, by standardizing a large number of silver salvarsan cures in regard to dosage and intervals, of course taking into consideration the patient's individuality and contra-indications due to reactionary manifestations. Under employment of his method, he finds that sodium silver salvarsan is not essentially more inconvenient or difficult to handle than neosalvarsan or sodium salvarsan, provided the operator is sufficiently skilled in intravenous injections and the same caution is employed in the preparation of the solution. No special apparatus is required. The curative effects in primary lesions, secondary and tertiary symptoms are very favorable, and apparently not inferior to the results of a combined course of neosalvarsan and Hg in the customary dose. The same is true in regard to the Wassermann reaction, but this point remains to be confirmed by essentially longer and more numerous observations. Whether or not dermatoses are more common with silver salvarsan than with the other salvarsan preparations, cannot be decided on the basis of the available material, and the same remark applies to early and late icterus. Judging from the author's experience, thromboses seem to be somewhat more frequent, in spite of absolutely correct intravenous injection. So-called neurorecurrences have not been observed in Wiener's clinic for several months past. The statement can be made that treatment with silver salvarsan without Hg in individual doses of 0.05 to

0.25 and in total doses of 2-3 g. has so far yielded entirely successful results in seronegative lues. Also in seropositive lues, an inferiority of this remedy as compared to the customary moderately strong combined treatment could not be observed, aside from occasional neurorecurrences. Silver salvarsan can be recommended for continued trial in suitable cases.—*The American Journal of Syphilis*, January 1921.

SILVER SALVARSAN.—Bering's contribution is based on 3,200 infusions of silver salvarsan, in 127 men and 132 women, in the Essen Dermatologic Clinic. It was found that the manifestations subsided very promptly in all stages of syphilis, with rapid disappearance of the spirochetes. In his experience, no venous thrombosis occurred under employment of silver salvarsan. Eruptions and icterus were not more commonly observed after silver salvarsan than after the older salvarsan preparations. Silver salvarsan is well adapted to the abortive treatment of syphilis. Under combined silver salvarsan and Hg treatment, a very favorable and long-continued influence on the Wassermann reaction was noted in Bering's material. The combined treatment seems still to be required at the beginning of the secondary period and is undoubtedly much more efficient, although a favorable influence of silver salvarsan alone is undeniable. According to Bering's experience, it might be advisable to prescribe in the first place two courses of combined silver salvarsan and Hg treatment, subsequent treatment to consist of silver salvarsan alone. The first two courses should be administered in rapid succession being of decisive importance for the welfare of the patient. With special reference to tabes and cerebral syphilis, a definite verdict cannot as yet be rendered, although the tabes was apparently favorably influenced. Very likely reactions on the part of the tabetic phenomena were occasionally noted, for example, pains in the legs. In the treatment of cerebral lues, silver salvarsan is a very suitable preparation, judging from Bering's experience. Cutaneous and mucous lesions subside promptly, and late syphilides likewise react favorably. The effect of silver salvarsan is regarded by Bering as equivalent to the effect of old salvarsan, with due credit to the smaller dosage and the smaller contents in arsenic of the new preparation. The toxicity of silver salvarsan is not increased under simultaneous administration of mercury.—*The American Journal of Syphilis*, January 1921.

DANGERS TO LIFE ASSOCIATED WITH GALLSTONE DISEASE AND THEIR PREVENTION.—Benjamin T. Tilton directs attention to the four chief dangers that may threaten the life of the carrier of gallstones. 1. Acute suppurative or gangrenous cholecystitis; 2. Cholangitis; 3. Malignant disease of the gallbladder; 4. Unwarranted postponement of operation. In the severer types of acute suppurative or gangrenous cholecystitis operation should not be delayed. Simple drainage of the gallbladder is the operation of choice in the severe cases. Cholangitis usually implies that one or more gallstones have entered the common duct and caused stoppage of the flow of bile, with resulting infection. The choice of the time for operation in these cases is a matter of judgment on the part of the surgeon. Operation is more hazardous at the height of the attack and in the presence of jaundice, but if the symptoms persist more than forty-eight hours and the patient's general condition is growing worse from the absorption of septic bile, operation offers the best chances and should not be further delayed. Here also the simpler and shorter operation for drainage of the gallbladder will meet the vital

indications, and will save the patient's life in cases where the patient would succumb to the more complicated and prolonged operation of choledochotomy and removal of the stones in the common duct. Malignancy is too far advanced when diagnosed to admit of complete surgical removal. Metastases in the liver are not amenable to surgery, and it is only when the disease is localized in the wall of the gallbladder that surgery is successful. Operation in delayed cases of cholelithiasis is often hazardous. Early operation in cholelithiasis is strongly indicated; only in this way can the present high mortality of this serious disease be lowered.—*Medical Record*, Jan. 15, 1921.

THE FUNDAMENTAL CLASSIFICATION OF DISEASES BY THE BASAL METABOLIC RATE.—Walter M. Boothby gives the following summary of the discussion: 1. The basal metabolic rate is a measurement of the heat production in a person under standard conditions. 2. Like the temperature, the metabolic rate is a measurement of certain heat phenomena inherent in the living organism. 3. The basal metabolic rate differentiates diseases into three fundamentally distinct groups: those with normal basal metabolic rates (a normal heat production), those with increased basal metabolic rates, and those with decreased metabolic rates. 4. The "normal" standard of the basal metabolic rate is not exact, yet the comparatively small "normal" variation, compared to the wide range of pathological variation, admits of fully as accurate grouping of diseases as does the body temperature. 5. It is to be hoped that the value of basal metabolic rates will not be discredited carrying out all the technical and physiological details requisite for obtaining accurate basal metabolic rates.—*Journal of the American Medical Association*, Jan. 8th, 1921.

DERMATOLOGY.

Conducted by RALPH BERNSTEIN, M. D.

PELLAGRA AND POVERTY.—The United States Public Health Service, after a three year study, shows conclusively that pellagra varies inversely with the family income in the cotton mill villages of South Carolina, and this is the first report in which the long suspected relation of poverty and pellagra is definitely measured. As the income fell the disease was found to increase and to affect more and more other members of the same family. As the income rose, the disease decreased and was rarely found in families that enjoyed the highest incomes, even though the highest was still quite low. The report attributes the difference among families with the same income to differences in the expenditures for food, intelligence of the housewife, and ownership of cows, gardens, etc. Differences among villages which were economically similar are attributed to differences in the availability and condition of food in local markets. A recent statement by one of the largest life insurance companies in the United States indicates that the food standards of the Southern wage earners must have improved remarkably of late, for the death rate from pellagra has fallen from 6.7 in 100,000 in 1915 to 2.3 in 1919.—*New York Med. Journal*.

TREATMENT OF ALOPECIA AREATA.—Prevention of the development of new patches and not the treatment of individual patches of alopecia alone

should be the aim according to Sabouraud, who also claims that another mistake is waiting to see whether the alopecia will harmlessly subside, stating that it is far better to treat it from the beginning as if it were going to be a grave form, which will not harm the mild cases while it will abort many of the graver forms. He advises the brushing of the entire scalp with a hard toothbrush dipped in a tonic and revulsive mixture; his formula for this being: cologne water, 300 c. c., glacial acetic acid 10 gm., and commercial solution of formaldehyd, 1 gm. A lotion of 30 gm. of Hoffman's fluid with 1 gm. of glacial acetic acid is applied to the patch itself and vicinity. In case the course of the alopecia seems threatening rapid extension, the small hairs broken off 3 or 4 mm. above the skin, he resorts to a crude oil salve. Men rub it in every evening and wash it out with soap in the morning; women three times a week with a weekly shampoo. He describes other measures for the graver cases, high frequency current, etc., and emphasizes that ten years of study of the subject have convinced him that inherited syphilis is responsible for a surprisingly large portion of cases. The general health improves under mercurial treatment, as well as the alopecia; his success in this line being so striking that he advocates mercurial treatment for young people with poor health or vague disturbances even if the idea of syphilis seems preposterous. When the alopecia develops at the menopause, ovarian treatment may aid, but this type generally heals spontaneously.—*Journ. Amer. Med. Asso.*

PITYRIASIS RUBRA PILARIS.—A typical case is reported by Levin and Smith occurring in a male adult who revealed more or less definite signs and symptoms of thyroid dysfunction. The skin condition showed rapid improvement and an apparent cure was obtained with thyroid therapy alone. No claim is advanced for the specificity of thyroid extract in the cure of this disease, but it is recommended that organotherapy should be given a trial in the treatment of pityriasis rubra pilaris, and only by further study and careful clinical observations will its actual therapeutic value and effects be definitely determined.—*Journ. Amer. Med. Asso.*

ALBUMINURIA AND EOSINOPHILIA IN SCABIES.—Hayman and Fay report the observation of forty-nine cases. Albumin was found in ten. Of thirty-five untreated patients, four showed albumin 28.5 per cent. Of the patients showing albumin, all had a generalized eruption on the hands, arms, legs and trunk. None showed any special or peculiar type of lesion, nor were pustules especially in evidence. Therapeutic measures appear to increase the incidence of albuminuria. In no case were the urinary findings of clinical significance, and the patients complained of only cutaneous symptoms. Fifty-five cases of scabies examined had an eosinophilia.—*Journ. Amer. Med. Asso.*

EPITHELIOMA DEVELOPING ON LUPUS LESION.—Wander reports four cases of epithelioma on lupus erythematosus. During the past ten years, 110 cases of lupus erythematosus appeared, including the four mentioned above, making the incidence of the occurrence of carcinoma on lupus erythematosus 3.6 per cent. at the Barnard Free Skin and Cancer Hospital.—*Journ. Amer. Med. Asso.*

TUBERCULOSIS OF THE SKIN.—Da Costa enumerates a long list of tuberculous processes liable to affect the skin, and emphasizes that while treatment is essentially local, general strengthening measures are as indispensable here as with tuberculosis in internal organs. Lupus now, he says, is given over almost entirely to Finsen phototherapy.

VACCINES IN SKIN DISEASES.—Of the many cutaneous conditions treated by MacLeod and others with vaccines, the only ones in which immediate and definite benefit resulted were suppurating staphylococcal lesions, especially acute recent and recurrent boils; by vaccines, both stock and autogenous, they had been able to cause the rapid involution of boils without the assistance of any form of local treatment and in almost every case to keep the patient free from recurrences, though there was often a tendency to relapse after the treatment was discontinued. In the case of chronic boils, such as those about the back of the neck, in which the circulation through the boil is impeded by the formation of scar tissue, the results were uncertain and, as a rule, unsatisfactory. In acne vulgaris, the results were not encouraging; where suppurative lesions predominated, the vaccine treatment caused a diminution in the pustulation but did not influence the comedones, and when it was discontinued an exacerbation of suppuration generally took place. In those cases of acne, chiefly in adult women, in which the comedones were few or absent and which were associated with small, more or less indolent subcutaneous abscesses, little or no benefit was derived from the treatment. In sycosis barbae of coccogenic origin, the results were uncertain and not to be compared with those from other methods. In tuberculosis cutis improvement was obtained from Koch's original tuberculin in lupus with superficially ulcerated patches, and healing had taken place in such lesions on the subsidence of the local reaction; but this procedure, even when small doses were given, was regarded as too dangerous for fear of lighting into activity unknown foci of the disease in the other organs. The results with bacillary emulsion were irregular and, though some improvement was obtained at times in superficially ulcerated patches of lupus and in scrofuloderma, in no case did they find that the benefit from it was in any way equal to that which could be obtained by appropriate local treatment.—*Jour. Amer. Med. Assoc.*

THE MODERN TREATMENT OF ACNE.—Highman remarks that the underlying causes of acne are probably associated with the prevalent changes inherent in puberty. Nevertheless he counsels a line of more or less local treatment which prevents the predisposing features from doing any great damage. He considers that the comedones act as foreign bodies which make it possible for the bacteria in the follicles to become active. Thus the indications for treatment are twofold: First, the prevention of comedone formation; second, the control of the underlying factors, where this is possible. Incidental indications are the treatment of the scalp and the expression of the pustules and comedones.

The general treatment consists of regulating the diet by cutting down the starch and sugar intake and by promoting intestinal function. The latter is best accomplished by eating green vegetables and stewed fruits, together with the judicious use of laxatives, if indicated. If there should

be a disturbance of the internal generative organs, a condition rarely found in the young, this should be controlled. In dieting patients, however, it is extremely important to keep up the general nutrition and weight.

For the production of a normal secretion and normal activity of the sebaceous glands, he recommends the use of the X-ray in given amounts, that is: one Holzknecht unit applied to the face weekly, for from ten to sixteen exposures. The X-rays work by diminishing the function of the skin glands and by diminishing the exfoliation.—*New York Medical Journal*, Jan. 22, 1921.

UROLOGY.

Conducted by LEON T. ASHCRAFT, M. D.

SYPHILIS OF THE GENITAL ORGANS OF THE MALE AND THE URINARY ORGANS.—(L. Thompson, *Am. J. Syphilis*, 1920, iv, 706.)

Luetic orchitis was apparently not recognized until 1736 when Astruc differentiated venereal tumors of the testicle which responded to treatment by mercury and those which did not. The author quotes from literature Benjamin Bell, Sir Astley Cooper, and Ricord. Syphilis of the testicle is one of the most frequent manifestations of the disease. Warthin found varying degrees of atrophy and fibrosis in the testis of all cases of syphilis in males which came to autopsy. Syphilis of the testicle occurs in two forms, interstitial or fibrous orchitis and gummata. The interstitial type is usually of earlier occurrence than the gummatous type, being observed as a rule during the first three or four years. The condition may be bilateral, although more frequently it is unilateral. Histologically the process consists of an infiltration of lymphocytes and plasma cells between the tubules, proliferation of the fibroblasts of the stroma, thickening of the basement membrane, and diminished spermatogenesis. Spirochetæ may usually be demonstrated early in the process. Gummata of the testicle are rarely bilateral and occur as firm nodules of varying size, either single or multiple, enclosed in fibrous tissue. Histologically the gummatous areas are surrounded by a vascular layer of delicate, fibroblastic proliferation of the stroma with considerable lymphocytic infiltration. Remains of the seminiferous tubules are observed between the gummatous areas. Interstitial orchitis is of insidious onset. On palpation the testicle is found to be of a very hard wooden consistency. Rarely the development is more rapid and associated with considerable swelling, pain, tenderness on palpation, redness, and edema of the organ. Gummata of the testicle as a rule give rise to few if any subjective symptoms. Palpation reveals either a smooth or nodular enlargement, more frequently the latter. Interstitial orchitis may be mistaken for orchitis due to trauma, gonorrheal orchitis, or epididymitis. Gummata of the testicle must be differentiated from tuberculosis and new growth. Syphilis of the testicle may be arrested in the majority of cases. The prognosis as to function, however, is not so favorable, but depends entirely upon the extent of the process. The treatment of syphilis of the testicle is mainly specific. Arsphenamine, mercury, and one of the iodides should be pushed vigorously. The author quotes a number of authorities between 1736 and 1863 who first called particular attention to syphilis of the epididymis. Thompson reported 16 cases, in 14 of which the epididymis alone was involved to the exclusion of the testicle. Thompson's record of 276 syphilitics gives a total of six cases of

involvement of the epididymis. Balme saw 13 cases among 2,300 syphilitics. Syphilis of the epididymis occurs in three forms, an acute and a chronic interstitial epididymitis and gummata. The acute interstitial variety may occur as early as the second month following infection but as a rule is of later occurrence. The swelling of the organ begins in the globus major and consists largely of an infiltration of lymphocytes and plasma cells with hyperplasia of the fixed elements. A certain degree of hydrocele usually develops. The chronic variety of interstitial epididymitis may follow the acute variety or develop without such an attack. It is of somewhat later occurrence, rarely being seen before the third year of the disease. Gummata of the epididymis occur as a rule much later in the course of the disease than interstitial syphilitic epididymitis. These lesions are usually multiple, rarely bilateral, and vary in size from that of a pea to that of a hazelnut. As with the other types of syphilis of the epididymis, the histologic picture of gummata has not been described. Langhans, however, who observed the gross section of a gumma of the epididymis postmortem, stated that it was a solid, caseous knot of angular, ramified shape about 1 cm. in diameter with a small transparent zone along the edges. Acute syphilitic epididymitis usually begins rather suddenly with more or less severe pain and great tenderness to pressure. Later, distinct indurated areas are palpable, and in a few days the acute symptoms subside and a chronic course begins. Chronic syphilitic epididymitis is of slow, insidious development and is usually without pain. Palpation in the beginning reveals the epididymis hard and elastic. Later it develops a board-like hardness and an irregular surface. When the fluid in the tunica vaginalis is of considerable amount, it may entirely mask the condition of the epididymis and lead to a diagnosis of simple hydrocele. Gummata of the epididymis are also of insidious development. Palpation reveals one or more tumors. There are no subjective symptoms. Practically the only condition from which acute syphilitic epididymitis must be differentiated is gonorrheal epididymitis. Chronic interstitial epididymitis due to syphilis may be mistaken for gonorrheal epididymitis or tuberculous epididymitis. Gummata of the epididymis may be mistaken for tuberculosis or new growth. Finally it may be said that in the diagnosis of syphilis of the epididymis the history, the presence or absence of other manifestations of syphilis, including the Wassermann test, and the result of antiluetic therapy are probably of more importance than the findings in the epididymis itself. The prognosis of syphilis of the epididymis is favorable as most cases clear up rapidly under specific treatment. The treatment of syphilis of the epididymis is the same as that of syphilis of the testicle proper.

THE TREATMENT OF TUBERCULOSIS OF THE BLADDER.—(L. Casper, *Zischr. f. Urol.*, 1920, *xiv*, 294.) Tuberculosis of the bladder is usually secondary to tuberculosis of the kidney. It occurs in two forms; either the entire bladder is involved or the condition is limited to circumscribed areas. In the former type the prognosis is unfavorable. After nephrectomy improvement may be expected only if contractility of the detrusor fibres is not impaired by connective tissue degeneration. When shrinkage of the wall occurs, any treatment is practically futile. Relief may be given only by the administration of narcotics. When the condition is extreme, exclusion of the bladder alone remains. No improvement has been observed following the use of tuberculin. The Guyon edict that a tuberculous bladder should be

treated by instillations rather than irrigations still holds good today. The author does not favor the use of carbolic acid as advocated by Rovsing or the use of lactic acid. Silver nitrate is of value only for mixed infections. Subjective relief is afforded by instillations of oily solutions with or without iodoform or guaiacol. The best results are obtained by the instillation once or twice a week of between 20 and 30 ccm. of a 1:20,000 solution of bichloride of mercury. This solution should be left in the bladder and its strength should be increased gradually to 1:2,000. Another method of value is that of Hollaender who gives potassium iodide internally and a few hours later instils calomel in oil into the bladder. Casper has modified Hollaender's method by using, in addition, guaiacol which has a soothing effect on a tuberculous bladder. The instillation he recommends consists of 10 ccm. of a mixture of calomel, 2.0, guaiacol, 5.0, and sterile olive oil to make 100.0. This treatment should not be repeated more than once or twice a week and must be continued for a long time.

NON-HYPERTROPHIC FORMS OF PROSTATIC OBSTRUCTIONS.—(B. Lewis and N. S. Moore, *Southern Medical Journal*, 1920, xiii, 740.) Non-hypertrophic obstructions at the bladder neck is a definite pathologic condition which may appear at any age but most commonly develops in later life. The diagnosis is not difficult if a systematic examination is made and particularly a cystoscopic examination. In the authors' cases the etiology was obscure, the ages of their patients varying from three to sixty-four years. The condition became aggravated during winter and early spring and in some cases had persisted for many years. Mode of life, infection, etc. were of little, if any, importance as etiological factors. In every instance complaint was made of frequency of urination which was usually accompanied by pain. The stream was small and sluggish and often cut off abruptly. The amount of residual urine varied up to complete retention. All of the older patients gave signs of absorption of toxins from retained urine, whether it was decomposed or not. On rectal palpation it was found that the prostate was not enlarged, at times being even smaller than normal, and that it was uniform in outline and not tender. Cystoscopy failed to reveal any intravesical enlargement, but showed a definite ring of tissue surrounding the bladder neck. Inflammation, changes in the bladder wall, such as trabeculation, diverticula, etc., were noted, their character being dependent upon the time the condition had been present. The treatment consisted in dividing the bar, dam, or stricture with as little injury as possible to the neighboring parts. This was done with the high frequency fulguration cautery, a small wire cable with a knife-shaped electrode on its distal end being passed through the cystoscope. If necessary, the operation was repeated a week later, the urethra being dilated once or twice with the Kollmann dilator. —(*Surg., Gyn. and Obs.*, Vol. xxii, 2, 1921.)

PERINEAL VERSUS SUPRAPUBIC PROSTATECTOMY.—Orth (*Ztschr. f. Chir.*, 1920, v, 101) makes the statement that the perineal prostatectomy is superior to the other methods. Its mortality varies between 3 and 4.7 per cent. while that of the suprapubic route is between 10 and 22 per cent. and that of the old perineal operation between 8 and 9 per cent. In the suprapubic and old perineal operations it is impossible to obtain perfect hemostasis and protection of the wound. For the induction of hemostasis the surgeon is dependent

upon tamponade which is not always effective. The constant oozing of blood and urine prevents firm adhesion of the tampon and when the bladder is left entirely or partially open thorough contraction of the vesical wall is inhibited. The difficulty of protecting the wound may lead to general infection through two routes; from the bed of the prostate by way of the lymphatics into the veins, or ascending through the renal pelvis into the kidney and from there into the circulation. The perineal method of Voelcker gives a clear view of the operative field during every step of the operation. Therefore it is possible to obtain good hemostasis and to suture the capsule so that at least for a few days the surrounding tissues are protected against the infiltration of urine. In cases operated on by the suprapubic route there is frequently considerable residual urine. This method also disturbs the anatomical structure and injures the expulsive power of the bladder. The perineal route prevents such damage. Inflammation of the testicle may follow any method and is due probably to injury of the seminal vesicles. Possibly this may be prevented by ligating the vasa deferentia in the operative field.

SURGERY.

Conducted by J. D. ELLIOTT, M. D.

THE TREATMENT OF PERNICIOUS ANEMIA BY SPLENECTOMY.—Giffin and Szlapka describe the results of splenectomy in pernicious anemia and sum up as follows: 1. This review concerns fifty patients with pernicious anemia for whom splenectomy was performed. All were operated on more than three years ago. 2. The operative mortality was 6 per cent. 3. Ten patients (21.3 per cent.) of those who recovered from operation have survived splenectomy three years or longer. 4. Five patients (10.6 per cent.) of those who recovered from operation have survived splenectomy more than four and one-half years, and are still living. The total length of history of these five patients averages almost six years. 5. It may be stated with reasonable accuracy that, in addition to the immediate remission which occurred constantly following splenectomy, splenectomy prolonged life in at least 20 per cent. of our cases. 6. We cannot satisfy ourselves that any particular pre-operative characteristics of the disease are indicative of favorable results following splenectomy. However, in the type of case in which there is evidence of active hemolysis, the patient shows a more marked immediate improvement. 7. Splenectomy may be recommended in pernicious anemia when, in view of all the circumstances, personal as well as medical, the possibility of the prolongation of life appeals to the family and to the patient. Occasionally the operation may be performed in order to bring about an immediate remission.—*The Journ. Am. Med. Asso.*, Jan. 29, 1921.

DIVERTICULA OF THE ESOPHAGUS.—Bevan points out that all pulsion diverticula originate at the junction of the esophagus and pharynx in the median line posteriorly, due to a weak triangular area where the oblique muscles of the pharynx meet the transverse circular muscles of the esophagus.

Under local anesthesia and with the technique described by the author, he believes that small diverticula can be removed so safely and readily that an early operation is indicated even if the symptoms are not severe. To avoid the dangers of leakage which often follow simple excision and suture, Bevan uses invagination of the diverticulum into the esophagus. If the

diverticulum is not longer than $2\frac{1}{2}$ inches it can be turned into the esophagus with three purse string sutures. This is not a safe procedure in a large diverticulum as vomiting may cause it to be carried up and close the air passage. Under these circumstances he has carried out two methods of operation. In the first, the distal half of the diverticulum should be invaginated into the proximal half with three purse string sutures and the remaining diverticulum obliterated by longitudinal sutures parallel to its long axis. In the second method, the diverticulum is crushed with heavy forceps near the middle, tied with a silk ligature and the distal portion cut off with the electric cautery. The remains which are then the size of a small diverticulum are invaginated into the esophagus with three purse string sutures.

Bevan especially emphasizes three points in the ordinary handling of these cases: 1. In the extremely rare case in which the patient is so reduced by starvation that he has little or no resisting power the importance of performing a gastrostomy, feeding the patient and getting him into better condition before undertaking the operation on the diverticulum; 2. The importance of local anesthesia; 3. The importance of a technic such as he has described, or at least a technic that will prevent the risks of leakage and infection.—*The Journ. Am. Med. Asso.*, Jan. 29, 1921.

THE TREATMENT OF RECURRENCES AND METASTASES FROM CARCINOMA OF THE BREAST BY MEANS OF RADIUM AND ROENTGEN RAYS.—Pfahler believes the ideal management of a case of carcinoma of the breast consists in a preliminary course of X-ray treatment covering the tumor and the lymphatics leading therefrom; then within a week, if circumstances permit, to remove the breast and all tumor tissue thoroughly. Post-operative X-ray treatment should then be given over the wound and the lymphatics in about four weeks from the ante-operative treatment. This should be repeated at intervals of a month or more for five or six times. If recurrent nodules develop in spite of this treatment, or in the absence of this post-operative X-ray treatment, then radium should be skillfully applied to such nodules, and the general areas and mediastinum should be thoroughly treated by roentgen rays. Radium and the roentgen rays should never be applied through the same area of skin within a period of four weeks providing either has been used to the degree of an erythema dose.

His conclusions as to the choice between radium and X-rays are as follows: 1. Radium is our most useful agent in the treatment of palpable recurrent or metastatic nodules from carcinoma of the breast. 2. The roentgen rays is our most efficient agent in the general treatment of the carcinomatous area and the mediastinal and pulmonary disease. 3. Either or both agents must be applied with skill and with a knowledge of the principles which govern their action. 4. With skill and thorough radiation life can be prolonged, the patient can be made more comfortable, and in some instances the patient may be expected to recover.—*Amer. Journ. of Roentgenology*, July, 1920.

OPHTHALMOLOGY

Conducted by WM. M. HILLEGAS, M.D.

CONJUNCTIVITIS DUE TO FOOD ANAPHYLAXIS.—F. A. Conlon is convinced that certain lesions of the eye, especially conjunctivitis, are produced by food to which the individual is sensitized.

In one case the eyelid became swollen and the conjunctiva hyperemic whenever the patient ate strawberries or tomatoes. Even the use of tomato catsup had the same effect. Another patient seemed to be troubled only when he ate eggs and still another after indulging in flounders. He recommends the protein skin test which consists in applying various proteins to skin abrasions and noting the local reaction which, when positive, appears as an urticarial wheel surrounding the cut.—*American Journ. of Ophthalmology*.

OCULAR MANIFESTATIONS OF CEREBRAL SYPHILIS.—Dickinson believes that most cases show at some time in their course ocular palsies of the external muscles and pupillary changes. Ataxia without ocular paralysis may be observed. Anomalies of the field of vision are common, often showing reduction of the temporal fields. The media are usually clear, but retinitis may occur, and optic nerve changes are quite constant, varying from mild neuritis to choked disk.—*American Journ. of Ophthalmology*, Feb. 1921.

DELIRIUM FOLLOWING CATARACT OPERATIONS.—The possible causes for such an unfortunate complication are: bandage, loneliness, circulation disturbances involving brains atrophied by senility, fear of losing sight, mental shock, homesickness; but perhaps the most frequent of these is senility. If a careful history of old people is taken before operating for cataract, many cases of delirium might be avoided. If possible have a friend or relative of the patient remain with them during their entire stay in the hospital and upon the slightest tendency to delirium have them persist in attempts to awaken the patient until this is accomplished. The voice of a friend has naturally more tendency to waken the patient from a dream than that of a stranger. It may be necessary to remove the bandage from the operated eye temporarily and it may even be necessary to send the patient home and continue the treatment at their home.—*American Journ. of Ophthalmology*, Feb., 1921.

CARCINOMA OF THE EYELIDS TREATED WITH RADIUM.—Sanford Withers, St. Louis, reports in detail eight cases of carcinoma about the eyelids treated with radium. The report is illustrated with photographs taken before and after treatment; six of his cases were cured, and the other two markedly improved. Discussing the advantages of radium, he says that surgically, growths of the eyelids are most difficult to deal with satisfactorily, as the removal of even small nodules often causes distortion of the marginal contour, and in those instances requiring the removal of over one-half of the lid margin or either angle, there is but little hope of restoring 100% function to that eye, and sooner or later it will demand an enucleation to free the patient from the discomfort of infection and irritation of the exposed globe. It has been observed that the sclera is particularly resistant to radium, and that the conjunctiva reacts more quickly and is more rapid in its repair than the epithelium of the lids, so there is a minimum of danger to the eyeball when it is protected as he outlines. So that radium seems to be the method of choice over any surgical procedures in these growths.—*American Journ. of Ophthalmology*, Jan., 1921.

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SOME REASONS FOR THE SYMPTOMATOLOGY OF DRUGS.*

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STUDENTS of the homœopathic materia medica frequently ask that an explanation be given for certain symptoms of certain remedies. In the term "students" I include practitioners of medicine as well as college matriculates; the only difference is that the former have been engaged in the study for a longer time. It is right that this inquiry be raised and every attempt made to furnish satisfactory answers. Every symptom of every remedy undoubtedly has an explanation upon a physiological, pharmacological, bacteriological or pathological basis. Perusal of recent scientific literature frequently gives the desired explanation of drug symptomatology. No claim of originality, therefore, is made for the following statements; I attempt merely to harmonize current opinions about medicines and diseases and to show how such a study is beneficial to the homœopathic student:.

Secale.—A recent current pharmacological statement is to the effect that "all drugs which increase the blood pressure

* This paper represents the substances of several addresses read respectively before the Homœopathic Medical Society of Pennsylvania, the Philadelphia County Homœopathic Medical Society and the Kings County (N. Y.) Homœopathic Medical Society.

decrease the flow of pancreatic juice." Whenever the secretion of this important fluid is diminished, a pronounced degree of "indigestion" must be the result. Among the remedies that raise the blood pressure is *secale* and, consequently, we have a right to expect that there will occur in its pathogenesis certain well-defined gastric symptoms. Such is the case and we have the right to infer that their presence is due to a decreased pancreatic secretion. This inference is borne out by the fact that the stomach symptoms of *secale* are those which result from pancreatic insufficiency. Among the important symptoms of this remedy referable to the digestive tract are "unnatural appetite," "eructations of bad odor," "nausea and vomiting." Our answer to the question, "Why does *secale* have gastric symptoms?" is that this medicine decreases the flow of pancreatic juice by raising the blood pressure.

China.—Quinine retards the activity of trypsin and pepsin. An interference with the activity of these important enzymes must necessarily result in dyspeptic complaints. *China* occupies an important place in the therapeutic armamentarium of one treating diseases of the stomach. Its symptoms are "early satiety," "yellow diarrhoea," "slow digestion," and presumably, for want of a better explanation, are caused by an inactivity of trypsin and pepsin.

Agaricus.—The active principle of *agaricus* is a smooth muscle stimulant. This action explains the various portions of its pathogenesis with reference to those parts of the body made up of involuntary muscular tissue. For example, its stimulating effect upon the bladder is the reason for the "sudden and violent urging to urinate."

Bryonia.—"The forms as well as the nature of diarrhoea are varied. One form is interesting because it illustrates the difference between the functions of the small intestine and those of the colon. This is found in the early morning diarrhoea of some patients who often have copious discharges, beginning as soon as they wake up in the morning, but ceasing afterward, without troubling them during the rest of the day."—Thompson, *Clinical Medicine*. This statement is of interest to the homœopathic prescriber as it explains the "early morning diarrhoea" of *bryonia*.

Oxalic Acid.—"Dr. Henry Head, registrar of the London Hospital, has directed the attention of the profession to a

very interesting class of pains which are elicited by lightly pressing the skin or touching it with the head of a pin. Nothing, therefore, could be so extremely peripheral as these pains, but their interest lies in the fact that only deep-seated visceral disease will cause them."—Thompson, *Clinical Medicine*. The reading of this statement suggests that this may be the explanation of the pains of oxalic acid, which are "pains in small spots." This symptom is also found under kali bichromicum.

Senega.—A class of substances called saponins is widely distributed throughout the vegetable kingdom and occur in some of our medicines. A pronounced effect of the saponins is to cause sneezing. This being the case, we expect to find "sneezing" a symptom of those medicines containing saponin. This is found as a constituent of senega and is the explanation for this symptom of this medicine.

Belladonna.—Atropine causes a moderate increase in the output of adrenalin. The action of adrenalin upon the intestinal tract is to cause, through an action upon the sympathetic nervous system, a cessation of intestinal activity: *i. e.*, a lessened peristalsis of stomach and bowels. This results in "diarrhoea," a "primary effect," as we term it in homœopathy. It appears rational to assume that this relationship existing between belladonna and adrenalin is, at least, partially accountable for the "stool" symptoms of this medicine. Atropine or belladonna have, aside from this increased adrenal output, a specific effect upon the intestinal tract which also contributes to explain the symptomatology of the drug with regard to this portion of the body.

Atropine causes a decreased secretion of the hydrochloric acid in the stomach; *i. e.*, hypochlorhydria. Belladonna has important gastric symptoms which are undoubtedly due to this cause. This statement not only furnishes an explanation of a portion of the symptomatology of belladonna but provides us with a very valuable therapeutic suggestion concerning the use of this medicine. Hypochlorhydria under certain circumstances, at least, is cured by belladonna, as the following case will illustrate: A man aged forty-five, had been suffering for months with gastric disturbances resulting from a more or less complete absence of hydrochloric acid, as was determined by laboratory tests. He had received treatment with indiffer-

ent results; nothing benefited him except the taking of hydrochloric acid, which was beneficial only so long as he was under its influence. Upon his presenting himself to me for treatment, I prescribed atropine 12X trituration, one powder every three hours; within two weeks he could discontinue the hydrochloric acid and within six weeks a stomach analysis showed that the normal amount of the acid was being secreted. He was eventually completely cured by this prescription. This is a fine example of scientific prescribing based upon symptomatology and pathology. At one time the case was so bad as to suggest the possibility of malignancy; query, was this not prevented by the prescription?

Rhododendron.—The following statement, taken from Thompson's *Clinical Medicine*, should be of great interest to the homœopathic prescriber: "A serviceable indication of the seat of the inflammatory process is afforded by the susceptibility of patients with any form of fibrous-tissue inflammation to changes in the weather. In health there is a perfect adjustment between the centrifugal pressure of the circulation and the centripetal pressure of the weight of the atmosphere. Changes in the latter, as indicated by the fall in the barometer on the approach of a storm, are readily compensated for by the nerve-fibrile being readily removed in the softer tissues from unbalanced intravascular pressure, but not so in the denser fibrous tissues. Hence, the good but inconvenient barometers which the gouty man has in his toes, which may ache worse while the sky is yet clear, but which, he knows from experience, mean that the clouds are on their way. So a patient with a sciatica finds his bed-covering no protection when his leg wakes him in the middle of the night with its observations on the weather out of doors." Do we not here find the long sought explanation for the "worse before the approach of a storm pains" of rhododendron?

Kali Carbonicum.—A number of remedies have as a prominent symptom "aggravation from or sensitiveness to cold." This is one of the most important modalities in the materia medica. Kali carbonicum, hepar sulphur, calcarea carbonica, China and silicia are, perhaps, the main remedies having this symptom. We read in Harrower's "Practical Organotherapy" the following: "The generally deficient cell oxidation commonly results in the temperature being below normal, and occasionally it is lower in the late afternoon, at

which time there may be fits of shivering, at times simulating malaria very much. There is a general chilliness and the extremities are cold. These individuals feel the cold very much and require undue amounts of clothing or bed-coverings. They are continually complaining about the cold, take all sorts of precautions to guard against it and slight draughts cause rheumatoid or neuralgic pains. 'Dead fingers' are often due to this same cause and cyanosis and even chilblains are connected by many authorities with hypothyroidism. Raynaud's symmetrical gangrene and other forms of vasomotor spasm with skin manifestations are also credited to the same fundamental cause, and time and again have disappeared when suitable needed treatment is instituted." The author makes the above comment under the general heading "Hypothyroidism." His statements would not look out of place in a homœopathic materia medica under the pathogeneses of the remedies previously mentioned. It is my inference and deduction that thyroid deficiency is accountable for the symptom "sensitivity to cold," as found associated with the medicines mentioned at the beginning of this topic. A close study of the syndrome resulting from deficient thyroid secretion is very similar to many of the symptoms found under kali carbonicum and the other medicines.

Graphites.—We quote from the above author again: "According to Leopold Levi, subthyroidism provides a favorable soil for recurrent erysipelas and he has found that this condition has yielded to thyroid." Graphites has long been used in homœopathy in the treatment of recurrent erysipelas. Here it is our main remedy. Probably graphites cures this condition by stimulating thyroid secretion, a deficiency of which is accountable for this symptom of the medicine.

Phosphorus.—This drug causes hemorrhages which are due to an endotheliotoxic effect upon intracellular cement substance. The capillary walls are injured and rents are produced by the intracellular pressure. Phosphorus has been frequently prescribed in hemophilia with negative results. The reason for this is that the drug is symptomatically indicated but not pathologically so as well. In homœopathy we must take into consideration the whole picture or aspect of a case in question. The pathology of hemophilia is that the prothrombin is defective, so that it takes longer than usual to develop into thrombin. We have herein given the reasons for the hemor-

rhagic symptoms of phosphorus and shown why it cannot be homœopathically indicated in hemophilia.

The vomiting, which is so important a symptom of this remedy is due to a fatty infiltration in the cells of the stomach and upper part of the intestine.

Ignatia.—"We know that an emotional shock—bad news, an accident, an unusual and strenuous mental impression, as seeing an accident or death—will cause a 'let-down' that is nothing but a more or less serious manifestation of adrenal asthenia."—Harrower. Reading the above statement calls to mind such remedies as ignatia and phosphoric acid, which have long been used for the effects of emotional disturbances. Two things that are equal to the same thing are equal to each other. May we not credit deficient adrenal output with the cause of the emotional symptoms of ignatia and phosphoric acid?

Arsenicum.—This poison causes three important pathological disturbances: Capillary paralysis, inflammation and congestion, and anemia. This group of pathological complexes must be the explanation for the greater portion of this drug's symptomatology. For example, the capillary paralysis is immediately responsible for the dropsical symptoms of arsenicum. The anemia accounts for the "weakness" of the remedy and the inflammation for the thirst, irritability, etc.

There are many causes of neuralgia but a common one is an impoverished or anemic state of the blood. Reference to a homœopathic text on therapeutics, under the caption, "neuralgia," discloses twenty-five or more remedies mentioned. We find, furthermore, that those remedies which we most frequently discover indicated are arsenicum, pulsatilla, calcarea carb. and natrum muriaticum. These five remedies all cause the pathology of anemia, which is the cause of the neuralgic symptoms. The neuralgic pains of other remedies, such as aconite and spigelia, can be explained on another basis.

Chelidonium.—In the pathogenesis of this remedy are found "general debility and lassitude," "indolence," "paralytic drawing," "lethargy," and "apathy." Chelidonine, the active principles, cause "depression and narcosis of the central nervous system." This is the cause of the lethargic and apathetic symptoms. "Chelidonine depresses the functional activity of smooth muscle in all regions thus far tested; *i. e.*, the bronchi, the intestine, the uterus and blood vessels."—*Journal of Pharmacology and Experimental Therapeutics*, May, 1920.

Ferrum.—"Three or four times a day, especially by a gastro-colic reflex after taking food, the intestinal contents is carried onwards for several feet by massive waves of peristalsis, of which the patient is normally quite unconscious. These waves have been witnessed by a number of observers. Here we have the explanation of 'lienteric' diarrhoea immediately following a meal and also the pain after food met with by some sufferers from chronic constipation."—Short. We simply add the suggestion that herein is found the explanation for the diarrhoeic symptoms of ferrum, which are "diarrhoea, undigested, immediately after eating." China has a similar symptom.

Baryta Carb.—A study of the endocrine glands is made especially interesting if done from the standpoint of obtaining homœopathic interpretation thereby. Recently it has been quite the custom to treat backward children with pineal gland. Good results are reported by McCord. (General Medicine, Billings, 1920.) The symptoms relieved are almost an exact counterpart of the more pronounced symptoms of baryta carb., especially the mental symptoms. A baryta child "does not want to play, has no memory, and is very slow in learning to talk, read or understand." (Cowperthwaite.) Perhaps disturbed pineal secretion accounts for these symptoms and baryta helps, probably by re-establishing a normal endocrine secretion.

Barium is a universal muscle stimulant. This fact explains the essential points of the symptomatology of the remedy. Particularly does it account for the circulatory, throat, stool, urinary and respiratory symptoms.

Calcareo Carb.—It requires no great stretch of the imagination to assume that a relationship exists between the calcareas and the parathyroid gland. A comparison of the symptomatology of calcarea carbonica and the symptoms resulting from imperfect parathyroid function reveals many points of similarity. Calcareo has, for example, "ravenous hunger," "depression," "fibrillary twitchings," "palpitation," and many more symptoms in common with a disturbed parathyroid secretion. Removal of the parathyroid causes tetany, accompanied by a loss of calcium. Calcium stops the symptoms due to parathyroidectomy. Short says that "the main function of the parathyroid glands is, perhaps, to control calcium metabolism."

Mercurius.—The following statement is good pathology: Positive chemotaxis and cell necrosis result in pus formation. This occurs usually as the result of bacterial infection but other causes may produce the condition, among which are mercury and salts of silver. How can one read this statement without making the assertion that herein is found the reason for the suppurative conditions which so frequently call for *mercurius* and *argentum nitricum* in homœopathic practice. It was known in homœopathy years ago that *mercurius* and *argentum nitricum* would produce and, consequently, relieve certain ulcerative conditions. Now comes along a modern scientific statement corroborating this belief and giving a rational basis for it.

Arum Triphyllum.—"The fresh corn contains an abundance of acicular crystals of calcium oxalate and the acidity is due to the penetration of the crystals into the tissues of the body, which could only be brought about by friction."—*Journal of Pharmacology and Experimental Therapeutics*, March, 1918. *Arum* is characterized by great acidity; the above quotation largely explains this action.

Phytolacca and *pothos foetidus* are other medicines containing acicular crystals which act as a mechanical irritant accounting for such symptoms as "smarting," "abundant lachrymation," "coryza," "sore throat," and certain respiratory indications.

Gelsemium.—Medullary paralysis is the keynote to the physiological action of this drug. Bearing this fact in mind and recalling the important centers situated in the medulla, we can account for much of the symptomatology of *gelsemium*. This fact explains the circulatory, respiratory, eye, throat, stool, urinary and "general symptoms" of this medicine. In my own laboratory I have repeatedly demonstrated the medullary depressing effect of *gelsemium*.

Picric Acid.—It has been demonstrated in my laboratory that picric acid causes a fatty degeneration of the spinal cord. This pathology, or a modification of it in degree, probably contributes to the causation of the characteristic symptom of this medicine as we are given it in our texts.

Natrum Carbonicum.—This substance has the ability to cause increased adrenal output, which stimulates the inhibitory fibres of the sympathetic supplying the bladder and intestinal tract, resulting in the "urinary" and "stool" symptoms

as we know them in homœopathy. The "mental" symptoms are also undoubtedly the result of the increased adrenal secretion.

Lathyrus Sativa.—The "weakness," "relaxation," and paralytic symptoms are the result of a paralysis, central in origin. The paralysis is certainly not peripheral and from such experiments as I have been able to perform with the drug I conclude that lathyrus is a medullary depressant.

Phosphoric Acid.—Orthophosphoric acid and its sodium salts cause a reduction of the calcium content of the serum, the degree of diminution depending upon the amount of phosphate used. The ultimate outcome is the production of tetany, to which disease phosphoric acid consequently bears a homœopathic relationship when this and other symptoms indicating the remedy are present.

Borax.—I can account for the symptoms "disturbed equilibrium" and the "fear of downward motion," so prominently identified in our minds as indications for borax by assuming that the medicine irritates the cerebellum. This is not altogether a mere presumption as a study of the symptomatology and toxicology of Borax gives strong proof that the seat of its action could not be elsewhere.

MANAGEMENT OF THE HEART IN THE ACUTE INFECTIOUS FEVERS.

BY

G. HARLAN WELLS, M.D., PHILADELPHIA, PA.

(Read before Homœopathic Medical Society of Pennsylvania, Sept. 21, 1920.)

"How is the heart standing it, Doctor?" This question is one frequently put to the physician by anxious relatives and friends of a patient suffering from pneumonia, influenza, typhoid fever and other acute infectious diseases, and is evidence of the fact that even the laity recognize what an important part the condition of the heart plays in determining the outcome in infectious diseases. There are three types of cardio-vascular disease that the physician must be prepared to recognize and to combat in the infectious fevers:

1. The acute inflammatory diseases of the heart, endocarditis, myo-carditis and peri-carditis.

2. Vaso-motor pariesis.

3. Toxic depression of the heart muscle, leading in the more advanced stages to myo-cardial degeneration.

The recognition of the particular form of cardio-vascular involvement, with which we have to deal, is a matter of great importance from the standpoint of treatment. Too often the attending physician is content merely to recognize that the pulse is rapid, or weak, and immediately resorts to the use of digitalis, nitroglycerine, or strychnine, with very little attempt to seriously determine whether any of these drugs are actually indicated. In fact, I am convinced by extensive observation that the too ready use of so-called cardiac stimulants in an indiscriminate manner, not infrequently diminishes the patient's chances of recovery. I am by no means a therapeutic pessimist, but when one witnesses the results of the activities of a certain type of therapeutic optimists, he is strongly impressed with the fact that toxic drugs in physiological doses are capable of doing as much harm as good. The instance of the physician who administered tincture of digitalis in a case of pneumonia until the patient vomited every mouthful of food or water taken for several days, and then dosed him with Fowler's solution of arsenic "to keep his strength up" until the latter drug set up an acute nephritis with almost complete suppression of the urine, is by no means the most extreme example I have witnessed of this type of optimism. Proper nursing, the early recognition of the type of the cardio-vascular complication, and the use of the indicated homœopathic remedy, will reduce the necessity for the use of physiological heart stimulants to a minimum, and will result in a decided lowering of the mortality rate.

The Acute Inflammatory Affections of the Heart.—The acute inflammatory affections of the heart occur in all of the infectious fevers, but are especially prone to occur in rheumatic fever. Though commonly spoken of as endo-carditis, peri-carditis and myo-carditis, the truth is that in almost every instance all of the structures of the heart are involved to a greater or less degree. Hence, the condition might be more properly referred to as carditis. The treatment of these acute inflammations consists in physical and mental rest carried out as completely as possible, the use of a counter irritant in the precordial region and the indicated remedy. As a counter irritant, my preference is for the use of tincture of iodine, ap-

plied for at least three days in succession. If this fails, canthos plaster may be used to produce a blister; a piece the size of a half dollar being applied for five hours. This may be repeated daily for three or five days. Personally, I have seldom seen any benefit or comfort to the patient result from the use of an ice bag, though many medical men speak favorably of its use.

Among the internal remedies, I place the greatest reliance upon aconite, especially if there is acute pain, a rapid full pulse, and mental anxiety on the part of the patient. The beneficial effects of this remedy are often rapid and striking, and, if I were limited to one remedy, aconite would be my choice. Bryonia also is useful, especially in rheumatic and pneumonic cases.

Physiological heart stimulants are of practically no value in acute carditis. Indeed, it is an extremely hazardous procedure to stimulate an acutely inflamed heart. The notable exception to this rule is in those cases where auricular fibrillation develops. This calls for the prompt administration of tincture of digitalis in from ten to twenty drop doses, not for the purpose of stimulating the heart, but to control the irregularity, and to slow the rate of the heart's action.

Vaso-Motor Paresis.—Toxic depression of the vaso-motor system is a frequent cause of circulatory failure in acute infectious fevers, even though the heart may be functioning in a normal manner. Vaso-motor paresis results in dilatation of the arteries, the arterioles and the capillaries with a consequent drop in blood pressure, with the accumulation of the blood in the venous system. Under such conditions it is impossible for the heart to maintain a normal pressure in the arterial system. Consequently, the circulation of the blood in the various organs of the body and even in the blood vessels of the heart itself is seriously interfered with. Low blood pressure, a rapid, weak pulse, coldness of the skin and extremities and perhaps cyanosis, are all indications of vaso-motor failure.

The prevention of this condition consists chiefly in the elimination of the bacterial toxins which are responsible for the depression of the vaso-motor system. The free ingestion of water, the use of tepid baths followed by sponging with alcohol and water, and thorough rubbing of the skin, together with

an abundant supply of fresh air are measures of decided prophylactic value.

If vaso-motor paresis already exists, the most effective methods of combating it are the application of heat, the use of stimulating foods and the elimination of toxins. If the skin or the extremities of the body are cold, the application of hot water bottles and the use of light blankets to maintain the warmth of the body, is a matter of primary importance. The chemical reactions necessary to normal tissue metabolism cannot take place if the temperature of the tissue falls two or three degrees below normal. Consequently, the organism makes every effort to maintain the temperature, sometimes at an expenditure of energy that is a great drain on a body already exhausted by disease. Not infrequently I have seen pneumonia patients treated by the open air method, lying on a bed almost smothered with heavy blankets in a room with the temperature ten or twenty degrees below the freezing point, with pinched face, blue lips, hands and feet as cold as the dead, and subjected to systematic chilling by cold air every time the nurse had to use the bed pan, or change the linen. Such extremes should always be carefully avoided.

Water by mouth, and two to four pints of normal salt solution daily per rectum by the drop method, until the excretion of urine reaches three or four pints daily is of great assistance in overcoming vaso-motor paresis. Hot, nourishing foods, such as milk, cocoa, meat or chicken broths, with barley or rice, given every two hours, are of great assistance in maintaining the nutrition and stability of the vaso-motor system. Two ounces of strong coffee two or three times daily is frequently helpful.

The homœopathic remedy should be selected in accordance with the general symptom complex. It is my observation that the giving of *carbo veg.* or *veratrum alb.* merely because the patient is cold is rarely beneficial.

Physiological drugs are the last things to be resorted to in overcoming vaso-motor failure. Caffeine, alcohol, strychnine, adrenalin, pituitary extract, digitalis and camphor are the ones most commonly used.

Caffeine is probably the most generally useful and should be given hypodermically in doses of from one to two grains combined with sodium benzoate every three hours. Alcohol has a decided, but temporary effect, and stimulation resulting

from its continued use is likely to be followed by a depression which limits its value. Strychnine acts chiefly by improving the tone of the vaso-motor system, and while it is capable of producing good results, its beneficial effects are undoubtedly very much over-rated.

Myocardial Degeneration.—Myocardial weakness and subsequent degeneration as the result of toxemia is a very common cause of circulatory failure in the acute infectious fevers, particularly in pneumonia, influenza and typhoid fever. The protection of the heart should be a matter of concern from the very beginning of the illness. Absolute physical rest, the avoidance of all mental or emotional excitement, the elimination of toxins through the skin, kidneys and bowels, and the selection of food suitable to maintain the nutrition of the heart muscle, are the therapeutic principles on which we must base our treatment. It is folly to expect drugs to act as a substitute for these procedures, and the doctor who neglects them and proceeds to put the patient on digitalis, alcohol or some other drug, at the very beginning of the illness for the purpose "of taking care of the heart," in my judgment, commits a grave error, and one which may cost the patient his life.

The importance of rest in these cases is generally recognized, but in many instances the mistake is made of not instituting it soon enough. Under no circumstances, for instance, should typhoid cases be allowed to be up during the first week, or pneumonia, or influenza cases for the first two or three days. Delay in instituting rest from the very beginning detracts much from the patient's chances of recovery. Again we must insist that mental and emotional disturbances are quite as injurious to the patient as physical effort, and the physician must keep business affairs and anxious relatives away from the sick room. Just a word as to the diet suitable to furnish an available supply of energy to the heart muscle. It has been conclusively demonstrated that sugars are a direct source of energy to the heart muscle. Consequently we should give four ounces of milk, containing a tablespoonful of milk sugar, or Mellin's Food, three times daily, in addition to soups or broths containing a considerable amount of thoroughly cooked barley or rice.

The elimination of toxic irritants from the blood should be carried out as recommended under the discussion of vaso-motor paresis.

That the properly selected homœopathic remedy is the most effective medicinal agent in the treatment of this type of heart failure is beyond question in my mind, with the exception of auricular fibrillation, to which I will refer later. Needless to say, there is no homœopathic specific for these cases. Phosphorus, arsenicum, rhus tox., baptisia, kali carb, and a number of other remedies are all useful when their peculiar indications are present.

Physiological stimulation is too frequently resorted to when it is not called for. Fortunately for the patient, most of the so-called heart stimulants have little or no action on the heart, as ordinarily administered. Hence, the bad effects from their use are less frequent than would otherwise be the case.

Digitalis is the most useful cardiac stimulant we possess in disease of the myo-cardium when its distinctive indication, auricular fibrillation, exists. Promptly and properly given under such circumstances, it will frequently save the life of a patient who otherwise is almost certain to die. In the absence of auricular fibrillation, digitalis is useless, and its routine administration in infectious diseases from the beginning for the purpose of taking care of the heart, is both useless and harmful. Strychnine exerts most of its influence upon the vaso-motor system, and has little value in combating circulatory failure when the heart muscle alone is at fault. Alcohol in its various forms, most of which are now extinct, undoubtedly has a stimulating effect upon the heart, which in an acute crisis may be valuable. To continue its administration, however, day after day, in the hope that the stimulating effect can be maintained, is contrary to the experience both of laymen and of physicians. Caffeine hypodermically, or strong hot coffee by mouth, or per rectum, are both useful in stimulating the heart and vaso-motor system, and where the pulse is regular but weak, should be given serious consideration, if physiological stimulation is deemed necessary.

Camphorated oil in doses of five to ten cubic centimeters hypodermically is a drug highly regarded by many as a heart stimulant. Its real value is a matter of dispute. Some pharmacologists believe it to be a cardiac stimulant, while others have concluded, as a result of extensive experiments, that it is inert as far as its action on the heart is concerned. From the standpoint of clinical observation, its use has not impressed me favorably. I have rarely seen a patient recover from an

acute infectious disease where camphorated oil has been used. Advocates of its use explain this by pointing to the fact that it is ordinarily employed only in extreme cases. There is much truth in this statement but the fact remains that the administration of this drug is rarely followed by the recovery of the patient.

PRECORDIAL PAIN: ITS CLINICAL SIGNIFICANCE.

BY

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THERE is probably no other symptom that will cause more concern to the patient and the physician, than a pain in the region of the heart. The psychic effect upon the patient is often far-reaching, fearing that he or she may have some severe heart disease, which is liable to shorten their lives and at the same time be associated with a miserable existence. If there is anything serious, those who are fearful must be told the truth in a very careful manner, while those who are bold and open, often want to know the unvarnished truth, hence the physician must be very sure of his ground before coming to a positive conclusion. If the presence of organic disease shows itself, it is his duty to lay down a regime which may prolong life.

In studying a case of pain in the cardiac region, the mental attitude of the patient, his age, habits and heredity are of significance. In the young, cardiac pain is most often due to tobacco, tea, coffee and other excesses. In young persons complaining of precordial pain in which there has been a history of any rheumatic infection whatever, the possibility of a mitral stenosis should always be sought for. This is a lesion often overlooked, due to the fact that clinical signs are often indistinct and also that the history is devoid of any condition which would suggest the previous presence of an endocarditis. In adult and middle life, there are many causes for precordial pain, and they may be conveniently classified as cardiac and extra cardiac.

Extra Cardiac Causes.—It has been stated by a competent

observer that 50 per cent. to 60 per cent., and some state as high as 75 per cent. of precordial pain is the result of disease outside of the heart. The writer does not feel it is well to take this fact seriously, for by so doing, it leads to laxness in the history and observation of cases, and causes one to overlook the probable conditions which may produce precordial pain. In considering extra cardiac causes, lesions of the chest wall should first be sought for. These include intercostal, neuralgia and myalgia, sub-pectoral abscess, tubercular disease of the ribs, and herpes zoster. A diagnosis of these causes is not usually attended with much difficulty as the findings of local tenderness and sensitiveness in the neuralgias and myalgias; the induration and later fluctuation, of abscess formation and the characteristic eruption of herpes zoster, make the picture clear.

Disease of the lung is rarely attended with pain in the cardiac region unless there is the presence of an acute dry pleurisy. Here the history of the case with the presence of the characteristic friction sound make the diagnosis easy, at the same time a marked intercostal neuralgia may closely resemble this condition.

A common extra cardiac cause is found in that class of patients who is ever with us, causing us great concern, and known as a neurasthenic. This type of case is very often associated with gastric symptoms or a dyspepsia, accompanied with gas on the stomach as they term it, mental depression with precordial distress.

These may give us considerable concern for we are often liable to consider the condition as gastric and overlook that group in which the pain and dyspeptic symptoms are not of gastric but cardiac origin. The diagnostic points to be considered are as follows: The patient, a young adult, shows distinct evidences of a neurotic tendency. The pain comes on more frequently after excitement than exertion and is out of all proportion to the physical findings as revealed by an examination of the stomach and heart and the true nature of the case must be made out by intelligent, comprehensive study of the case.

Cardiac Causes.—The pain of cardiac disease varies in intensity and severity from a distress to that of severe agonizing type which is found characteristically in angina pectoris. In considering pain, certain factors should be noted: 1. Loca-

tion; 2. Radiation; 3. Character; 4. Severity; 5. Constant or paroxysmal; 6. Effect of exercise, position and taking of food and lastly the associated symptoms.

Cardiac pain may manifest itself at times in the healthy individual, where they overtax their heart reserve by undue exercise. This type is not uncommonly seen among athletes and those who take up gymnastics to the extreme, under improper guidance.

Angina pectoris stands out pre-eminent as the cardiac disease in which pain is diagnostic. Diagnosis of a true angina should cause little difficulty, when the type of pain with its characteristic radiation is present, plus the vaso motor disturbances, the marked anxiety, fixed position of the patient and the cardiac vascular findings present themselves.

There are several allied conditions which closely resemble angina pectoris, notably among these is that of pseudo angina. The diagnosis of a pseudo angina, we can presume to be a dangerous one; such observers as MacKenzie practically disregard the condition as existing and Allbut states that a pseudo angina is a pseudo diagnosis. From observation, the writer is of the same opinion with but one exception, namely, those cases where an anginoid pain occurs in a highly neurotic young adult. These pains, which resemble angina, may be attributed to a hypersensitiveness of the spinal segments and pain is referred to the terminal filaments in the cardiac region, where they are most highly developed. This factor has been conclusively proven by the studies of Head in reflex pain.

Cardiac pain from a clinical standpoint may be said to be the cry or expression of a tired heart muscle. Such pain is invariably anginal in character and associated with dilatation of various degrees, with loss of the office of contractility on the part of the cardiac muscle. This condition is also often termed myocardial weakness, asthenocordia, or myocardial degeneration, the last term frequently used on insufficient evidence. It is this type of heart condition which is frequently associated with gastric symptoms, the patient being treated over a long period for a supposed gastric disease. While in fact the manifestations are cardiac in origin and the condition may progress to a point where it becomes a serious one. Many of these subjects will complain of their distress and probably dyspnoea, especially upon exercise after eating.

Pain cannot be considered diagnostic of the valvular

lesions. In but two conditions may it be suggestive, that of mitral stenosis, especially in young persons and also in aortic disease, where we have the presence of an aortitis with coronary sclerosis. The pain in this type is usually paroxysmal, most marked beneath the sternum and tends to radiate, if it does at all, to both sides or posterior to the back of the neck. A peculiar condition in which pain may be present is that associated with change of rhythm, as pointed out by MacKenzie.

Aneurysm as a cause of pain should always be suspected in those cases where there is a history of persistent deep-seated pain beneath the sternum, or in fact any persistent deep seated pain of the chest should suggest aneurysm.

Of the inflammatory conditions of the heart, namely, those of endocarditis and pericarditis, pain may or may not be present. Of endocarditis, it is not diagnostic, and in pericarditis it varies from its complete absence to that of a severe constant stitching-like pain in the precordial region. In the detection of these two conditions the history is of prime importance, due to the fact that they are secondary conditions as a result of a primary disease, notably seen in rheumatic and pneumonic fevers. Diphtheria may present pain, and when associated with nausea, collapse and rapid pulse, is of serious omen, denoting oncoming paralysis. Precordial distress is at times seen in typhoid fever, and its presence should warrant the examination for the possible instance of an aortitis as has been pointed out by Thayer.

Other conditions of the heart in which severe pain is followed by marked collapse and sudden death are those of rupture of the heart, in which an aneurysm of one of the chambers is usually detected before such an accidental condition occurs, and thrombosis of the coronary vessels.

A word in reference to the examination of these patients may not be amiss. It is needless to state that a most careful examination is often required to arrive at a conclusion. The physical examination of the heart should be made in a systematic, painstaking, detailed manner. At times auscultation will reveal very little evidence and in no class of cases does palpation and percussion and especially the latter play such an important role in the detection of physical abnormalities. The estimation of the cardiac function or reserve power of the heart is helpful in that class associated with myocardial weakness. A fluroscopic and X-ray examination is often of great

value and is not resorted to as often as it might be in detecting minor dilatations. Lastly the electro-cardiograph is of value where it is available.

In closing, I have attempted to point out in a brief and practical manner, the varied causes and significance of precordial pain—a subject of much interest and concern to both patient and physician.

THE ACUTE MEDICAL ABDOMEN.

BY

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(Read before the Homœopathic Medical Society of the State of Pennsylvania, September 21, 1920.)

IF any one has had the temerity to write an essay on the acute medical abdomen, his article has not been printed, or it has escaped my attention. Many have been the papers published on the "Acute Surgical Abdomen;" indeed, one bearing such a title is listed for reading before our "Surgical Section." The writer feels, therefore, that he is justified in claiming some originality for his subject, and in applying for a copyright on the same that no other writer can follow the precedent he has herewith established. It is true that many have thought of the subject, but none has taken action. It may be that the audience, after listening to a discussion of the subject will feel that the subject should be debarred from further consideration, and all subsequent essays on the same enjoined.

That we may avoid any confusion, let us have some definitions. "The Surgical Abdomen" is one in which operative treatment is indicated. The "Medical Abdomen" is one to be treated by non-surgical measures, *i. e.*, by medicines, rest, diet, local therapeutic measures, and in fact by any and all means other than the knife. We may make use of the term "medical abdomen" as applied to a disease which should always be treated medically, or to a particular case of illness referred to the abdomen, said illness belonging to a class that is treated by the knife or not, according to indications.

The "Acute Abdomen" is one which has been acutely or suddenly attacked by evidences of disease. Severity of the symptoms is hardly to be considered as a factor in making the

term "acute" applicable or appropriate. The most dangerous appendicitis or strangulated hernia may exist with mild clinical phenomena; while it is possible for the most benign disturbances of digestion to be attended by excruciating suffering.

Clinically, the proper understanding of what constitutes a medical and what a surgical abdomen is of the highest importance with the burden of responsibility resting upon the physician, and not upon the surgeon. An error by the former is likely to cost a human life, and often does so. In the case of bad judgment or lack of diagnostic acumen by the latter, the worst that can happen is an unnecessary operation, loss of life in exceptional instances only, and personal ridicule by reason of his error. The physician seeing the patient at an early stage of the illness when the diagnostic criteria are the best defined, is the one to whose judgment we are obliged to defer in most instances. Later, it may be that symptoms become so confused that the ablest clinician can determine nothing beyond the fact that some one has blundered; indeed, a diagnosis at such a stage becomes well nigh impossible.

It is a general principle of diagnosis that the common illnesses are to be suspected as solving the problem. He who would dispute this statement in any given instance must assume the burden of proof. At the same time, all of us must remember that the unlikely is ever within the realm of the possibilities, and this, too, when least expected. An overwhelming majority of acute abdominal illnesses observed by physicians are medical pure and simple. They include for the most part pains and vomiting of more or less acute onset, and are dependent upon neglect of simple hygienic details with which all of us are fully familiar. Very many of them are due to constipation. Usually their diagnosis is a simple matter. The history of the case and the absence of certain well known signs of appendicitis, cholecystitis, etc., make the nature of the illness clear. But histories are fallacious at times, made so by too intense a desire on the part of the patient to help the physician or to advance a theory. Hence it has been a constant precaution on my part to accept no statements of a patient without proving their accuracy. While advocating careful history taking, the latter should never be practiced in the manner of the lawyer cross-questioning a criminal at the bar. The practical point herein is that patients state what are matters of fact, indisputably so, but do it in

a most misleading manner. For example, quite recently a young man had partaken of an evening meal, which his wife declared may have consisted of some suspicious meat. During the night he was seized with atrocious pains, which continued until the next morning. The abdomen was rigid, but no tender points were found. The temperature was 102 degrees, pulse but 80. At 3 P. M. the rigidity continued despite treatment—hot compresses, belladonna, and morphia—there was now tenderness in the median line about two inches below the umbilicus, temperature 103 degrees, pulse 120. Notwithstanding the history pointing to a dietetic transgression surgical abdomen was diagnosed. Operation performed at 8 P. M. by Dr. G. A. Van Lennep, discovered a generalized appendicitis, an abscessed appendix about ready to rupture, within 24 hours after the initial pain. Said appendicitis was adherent and situated in a most unusual position, *i. e.*, in the median line and just anterior to the vertebral bodies.

In another instance, the patient, a young woman, had indulged in a midnight supper, including the elaborate dishes not unusual at fashionable hotel feasts, and then departed for a week-end party at a country home. Late in the morning she was taken with severe pains, diagnosed as indigestion, continued for one week, when she died of general peritonitis. The autopsy disclosed a gangrenous appendix as the cause.

Usually these cases of acute surgical abdomen are not sufficiently obscure to make their differentiation from those demanding medical treatment at all difficult. Nervousness on the part of a physician possessed of unusual solicitude for the welfare of his patient may lead to a diagnosis of surgical abdomen under circumstances not justified by the clinical data, and which mistake is harmless, as usually caught up by the surgeon after more deliberate examination. The fulminating and unusual cases of appendicitis, such as those above described, demand quick discernment and action, for diagnostic procrastination here oftentimes means the loss of human life. Their symptomatologies consist, as a rule, of sudden onset, extreme local sensitiveness with paroxysmal pain, and marked muscular rigidity, and even spasm, but with little or no disturbance in pulse or temperature. Local sensitiveness is never part of the acute medical abdomen. Rigidity of moderate degree is sometimes noted, but is of short duration. A pretty safe rule for guidance in doubtful cases is the readiness with

which the medical abdomen yields to treatment. Considerable relief may be expected within four hours, and always within eight or twelve. Any prolongation beyond these periods demands a searching inquiry as to the why and wherefore, with every chance in favor of the proper treatment being surgical.

Acute abdomen occurring paroxysmally is seldom entirely medical. In the majority of instances where I have so treated patients, I have later modified my views. Many have been the cases of cholecystitis in which medicine has carried the patient along very nicely for periods of ten or more years; the final outcome, however, being surgery. In our gall-bladder cases, especially those of cholelithiasis, one therapeutic fact is noticed with considerable regularity, namely, the remarkable and permanent relief obtained by the single dose of morphia. So patent is this to me that I now accept it as almost diagnostic, especially of biliary calculus.

Recent experiences which have garnered two notable examples of the propriety of regarding paroxysmal acute abdomen as surgical may be noted. A boy aged 15 years had had severe abdominal seizures for several years. It was emphasized that he had never had an attack while away from home at camp, and that digestive indiscretions could be brought forth to explain most of the seizures. Many had been the physicians who had examined the case. There was slight appendical discomfort on pressure. Surgical abdomen was the most positive diagnosis permissible; and the operation discovered an appendicitis.

A second instance was in the case of a patient of Dr. J. D. Schofield. The patient had had numerous examinations, and his pains explained as due to hyperchlorhydria by a gastric specialist. No relief was afforded by the treatment advised. I saw the patient during a paroxysm. Inspection showed prominence over the gall bladder; some very slight tenderness in that locality; moderate local rigidity; and a history of complete relief of attacks following a hypodermic of morphia. The origin of the pain was assumed to be in the gall bladder, and in view of the regularity and promptness with which morphia brought relief, calculi were suggested as the cause, a diagnosis that was confirmed by the operation three days later.

Right here permit me to digress from our main subject to say something about the diagnosis of abdominal illnesses by inspection. My remarks are trite, so much so as to seem

needless. Before inspecting the patient's abdomen, it is of the highest importance that there be a good light so placed as to illuminate the abdominal walls evenly, and to cast no shadows. The patient should, wherever possible, be laid upon a hard surface (*e. g.*, an examining table), and the utmost care observed that the median line of the body from the centre of the chin down through the umbilicus, the symphysis pubis and the internal malleoli in contact, shall be absolutely straight. Inequalities of the surface of the table upon which the patient is resting or disregard of an absolutely straight posture invalidate the method of examination, and at times may render it useless. Properly carried out, information afforded by simple abdominal inspection is surprising in its accuracy.

Acute medical abdomen may originate in what may appear to the unthinking as trivial causes. Thus I recall examples as follows: A young woman living in apartments was accustomed to very light breakfasts, equally abstemious luncheons, and evening dinners elaborate and generous to a vice. Aside from this her habits were good. The X-ray showed an enormous stomach, which was, of course, to be expected in view of what she put in it each night. It was not surprising that she had paroxysmal pains and sour risings.

A case of probably similar pathology was that of a business man who took his midday meal at any time offered between interviews with his associates, which meant that he might eat any time between noon and 5 o'clock.

In many cases, and these probably are the most frequently noted of all: The patient bolts his food, and without one moment of rest or diversion rushes back to his office or shop; and such cases recover promptly from no other treatment than a quiet rest of one-half to one hour after the midday meal.

The acute medical abdomen may mark the onset of numerous of the acute infections, notably of smallpox, yellow fever, typhoid fever, and scarlatina. Diagnostic errors in these cases are unavoidable in the beginning when it is not known that the patient has been exposed to contagion. The most likely error occurs at the beginning of smallpox in the malignant types, of which vomiting, epigastric pain, and haematemesis are characteristic symptoms. In one such instance coming to my attention a mistaken diagnosis was made because the patient had eaten lobster at the seashore the previous evening.

The right iliac pain of typhoid is well known, and seldom is mistaken for appendicitis. Inasmuch as it is unusual indeed that typhoid fever is characterized by pain prior to the time that the diagnosis has been made positive, we seldom experience any difficulty. In a number of instances typhoid starting with initial abdominal pain has been incorrectly diagnosed as appendicitis and operation has been performed thus revealing the diagnostic error. Fortunately, the mistake has proven a benevolent one in a majority of instances, because the disease had been running a latent course and the typhoid lesions had progressed to rupture or to a stage dangerously near to the same. If one is in doubt as to whether he is dealing with a typhoid fever or an appendicitis, he has ready a differential datum in the leucocyte count, which is low in typhoid and the reverse in appendicitis.

As to how far we shall recognize the existence of acute medical abdomen of influenzal origin, it is difficult to say. Many authorities argue strongly for such a class of cases, but present no definite symptomatology to confirm their views. I myself feel that such cases are seen with a fair degree of frequency though relatively rare in proportion to the large number of cases of influenza with which we meet. There are physicians, however, and of high authority, who ridicule the so-called abdominal influenza.

Other infections might be mentioned here, as cholera, dysentery, malaria, etc., but time forbids.

Late in the course of diphtheria a type of abdominal pain of serious nature is encountered. It is situated immediately below the ensiform cartilage. It may be quite severe. It is usually continuous, and is associated with nausea and vomiting. By the uninitiated it is apt to be mistaken for "stomach disturbance." It is really symptomatic of myocarditis and portends a fatal termination of the illness. In one such instance gastric ulcer had been diagnosed by the attendant.

The arterio-sclerotic abdomen is strictly medical, as it is never susceptible of surgical intervention. Of it several types may be observed. One of these is that commonly called "abdominal angina," a term that may hardly pass muster scientifically, but is expressive. It does not appear to be as well known as it should be, that in arteriosclerosis, the affected vessels show a remarkable vaso-motor instability, usually manifested by sudden contraction of their lumen, which, however,

persists for but a few minutes, seldom over fifteen. Appearing in the legs, such spasm produces the condition called intermittent claudication; in the brain, temporary paralysis or other disturbances of function; in the eye, temporary obscuration or loss of vision, etc. In the abdomen, the result is usually a severe cramping pain which may continue for any period ranging from a few seconds to fifteen minutes, seldom longer. As a rule the history of the patient shows that the gastro-intestinal functions have not been perfect or have been deteriorating for a long time preceding the initial attacks. In a certain number of the cases, the epigastric pain is usually referred and is a direct manifestation of cardiac disturbance.

A rarely observed type of abdominal pain is found in the gastric crises of tabes. Failure to recognize their nature is, I might say, invariably the result of insufficient examination, for their association with Argyll-Robertson pupils, absent knee jerks, positive Wassermann, and lightning pains in other portions of the body, should be sufficient to prevent error. Yet mistakes occur, as all neurologists and surgeons will testify.

The neuralgic abdomen probably does not exist. In the present day, diagnoses of enteralgia, gastralgia, nephralgia, etc., are seldom justifiable. I must say that I have not seen one instance in the past twenty years in which such a diagnosis was deserving of one minute's thought.

Abdominal neuroses as cause of pain deserve scarcely more consideration than do the neuralgias. For the most part they are the product of mystery if not of ignorance. It is too common a practice to call a condition neurasthenic or hysteric when data pointing to a definite anatomic condition are absent. My friend, Dr. W. R. Williams, did wisely when he wrote his valuable paper on "Neurasthenia and the Diagnostician." If cases are examined thoroughly, it will be discovered that many, very many indeed of our neurasthenic illnesses are really of substantive origin, the neurasthenic element having been impressed upon the clinical picture by reason of temperamental peculiarities or household or business environment.

Much more real are those examples of acute abdominal disturbance due to endocrine disturbance, but especially to hyperthyroidism. Within two years, I have seen two remarkable examples of persistent and malignant vomiting in connection with exophthalmic goitre. It is possible that the future development of endocrinology will demonstrate the existence

of a variety of abdominal illnesses due to endocrines other than the thyroid.

A very interesting class of illnesses is found in the complications of angioneurotic oedema. As is well known, this disease is characterized by the onset of localized oedema which may invade suddenly any portion of the body or its viscera. Appearing on an outer surface the diagnosis is clear, but when invading the mucous membrane of the interior the recognition of the nature of the case becomes a matter of difficulty according to the accessibility of the affected mucous membrane. Occurring in the larynx, the angioneurotic oedema causes paroxysms of obstructive dyspnoea, sometimes fatal, sometimes demanding tracheotomy. Similar local oedema may occur in the gall duct, ureters, the stomach, intestines, etc., and so simulate organic or permanent disease. The only way that occurs to me that such cases can be recognized is by the absence of tender points or muscle spasms and the history of angioneurotic oedema occurring in other localities.

The abdominal pain of zoster may at times make trouble for the diagnostician when a correct history is not forthcoming. It is seldom, however, that the pain is referred until the scars of the herpes have left the body; hence mere inspection should settle the problem at once. If a mistake is made, it is simply the physician's own fault.

Quite recently I was afforded the opportunity of observing casually a most interesting abdominal illness in a young girl, aged 15 years. I was in attendance upon her father at the time, and was asked to examine the patient pending the arrival of her personal physician. Cramp-like pains of severity were present. She had had numerous paroxysms. Inspection of the abdomen showed an oblong mass crossing the abdomen at the level of the umbilicus. It was readily palpable. The same observation was confirmed by the family doctor and his consulting surgeon. The following morning it had disappeared along with the pain. Now for the sequel. The paroxysms recurred for several months, and then because the girl had never menstruated satisfactorily, she was taken by her parents to a prominent gynecologist, who made a physical examination and found an imperforate hymen. This he incised and drew off what was stated to me as six quarts of old and altered menstrual blood. What an egregious error. And not because of ignorance, but because the physician and sur-

geon in the case did not take the trouble to look or to take cognizance of the point in the history relating to deficient menstruation.

The abdominal pains of pneumonia and pleurisy are well known in theory, but in practice oftentimes escape attention. All the textbooks refer to this subject and tell us that many have been the instances in which they have led to unnecessary abdominal operations, especially for appendicitis. The importance of initial abdominal pains in pneumonic fever was first noted by Dr. J. Crozer Griffith, whose observations were directed largely to the clinical study of disease in childhood. Since the publication of his original paper, his conclusions have been pretty generally accepted, and their applicability to adult life admitted. My first experience in pneumonia with initial abdominal symptoms was about twenty years ago. The illness began with what I regarded at the time as typical gall bladder pains, and framed my diagnosis accordingly; but the following day, the symptomatic picture had changed. About five years ago an unusually interesting case was admitted to Hahnemann Hospital, that of a colored woman aged 24 years. She gave a history of severe abdominal pains and obstinate constipation, active purgative medication having failed utterly to secure any action of the bowels whatever. When I saw her the first time, inspection of the abdomen showed a decided prominence over the right lower quadrant with rigidity; palpation gave rigidity on that side, *i. e.*, an apparent tumor. Although her respirations were rapid, an examination of the chest was neglected. Half an hour later, every abdominal symptom excepting the constipation had disappeared. The following morning they returned, and then an examination of the chest showed a pneumonia of the left upper lobe. The illness followed an uneventful course to complete recovery. So far as can be seen, the only safeguard against diagnostic errors in such cases is the rational practice of systematic examination of all patients instead of contentedly taking radical action upon the presence of one so-called signal group of symptoms. The presence of undue frequency of respiration should always awaken suspicion. Various explanations have been offered for the presence of abdominal pains in pneumonia, but not one of them has received the sanction of authority. The subject is an important one, for Chatard has observed abdominal pains 51 times in 658 cases of pneumonic fever.

Abdominal pains in pleurisy are encountered less frequently, still Lord observed abdominal pain 8 times in 145 cases. The pain is usually in the upper abdominal region, and may be associated with rigidity and tenderness. A positive diagnosis can be made only when the physical signs of pleurisy are evident. Unfortunately for accuracy's sake, the early friction murmur is not infrequently absent in the initial stage of diaphragmatic pleurisy, and a correct conclusion can be reached only by a study of the entire clinical picture with a historical survey of the illness to date.

I recall one case of diaphragmatic pleurisy associated with abdominal pain and hiccough in which the attending physician had made a diagnosis of uraemia based upon the urinary findings. While it is absolutely necessary to make careful urinary observations in every case of "acute abdomen" one should never, unless the results are so positive as to be unmistakable, regard them as indicative of the condition of the kidneys. In the first place, we are all of us fully aware of the vagaries of chronic interstitial nephritis now running a latent course incapable of recognition until death is near, and again, presenting symptoms suggesting severe functional or even organic disturbance of other viscera than the kidneys. We are fully cognizant of its ability to produce hemorrhages, and yet too often forget that such hemorrhages may occur in the kidneys as well as in the brain. Now to the point. A man, aged 63 years, the subject of high blood pressure, and known to have interstitial nephritis, was taken with characteristic pains suggestive of left renal calculus. The urine contained a slight amount of albumin, a few red cells, and a few hyaline and granular casts. There was no local sensitiveness. He made a prompt recovery so far as the pain was concerned. He lived six years longer in good subjective health, but always had polyuria, slight trace of albumin, and a few casts, and blood pressure ranging around 170. Finally he was taken with cerebral hemorrhage from the effects of which he finally died. Interstitial nephritis far more frequently may have its latent course interrupted by painful crises suggestive of stone.

On the other hand, severe abdominal pains from any cause, gastric, intestinal or hepatic, are capable of producing (?) albuminuria. Of this, we all have seen examples without number. Such cases need not lead to diagnostic error. The urine at the time does not show any casts other than the

few hyaline observed in most instances of persons of middle life, and the albuminuria demonstrates its circulatory origin by disappearing promptly with the subsidence of the pain.

Really this subject of abdominal pain subject to medical treatment might be considered for an indefinite time, as it is so vast. I have refrained from mentioning Glenard's disease and its many vagaries for it, of itself, is a vast subject. For the purpose of bringing the matter before you for discussion I may mention as subjects which space will not permit me to discuss such common and rare conditions as lead-poisoning, active congestion of the liver, acute yellow atrophy of the liver, acute poisoning, cystitis, prostatitis, urinary retention, faecal obstruction, some splenic disorders, visceral and peritoneal tuberculosis, catarrhal jaundice, so-called hyperesthenic dyspepsia, pericarditis, aneurism, Henoch's purpura, Potts' disease of the spine, relapsing fever and, I fear, many others which escaped my attention at the time of writing.

The mention of some of the above may appear to this audience to be pedantic, but, in the course of many years it has been my fortune to meet with single examples of each of them. Notwithstanding the fact that our work compels us to take cognizance of the usual, we must always bear in mind that the unusual or the curious may occur to any one of us when least expected.

As to catarrhal jaundice, it has been mentioned in the above list because up to two or three years ago this remained the single abdominal lesion which one surgeon or another had not claimed as a surgical disorder. Recently, there has been a disposition, which I deplore, to regard examples of this disease as operative. Few, if any, cases of catarrhal jaundice ever terminate fatally. The only question is if its long continuance produces a permanent damage which may shorten life. If so, early operation may be considered, but that catarrhal jaundice does produce permanent damage remains to be proven. Personally, I feel that for the present, all cases of catarrhal jaundice should be given a period of not less than four months nor more than six months for purely medical treatment; as a matter of fact, all the cases that I have seen made excellent recoveries within a very much shorter period of time than those mentioned.

THE ACUTE SURGICAL ABDOMEN.

BY

G. W. HARTMAN, M.D., HARRISBURG, PA.

(Read before the Homœopathic Medical Society of the State of Pennsylvania,
September 22, 1920.)

THE subject of abdominal troubles merits full consideration by all practitioners of the healing art, because the abdominal organs occupy a place of equal importance functionally with the rest of the bodily structures and they are the most susceptible to pathological and functional disturbances. Upon their healthy condition and complete physiological function depends the health and promptly, when they do not functionate, the life of the body.

I was impressed when my friend and teacher, Dr. Bartlett, announced that he would take up and discuss "The Acute Medical Abdomen" for the Bureau of Clinical Medicine. Its discussion there is apropos. There is frightful mortality from diseases of the organs contained within the abdomen. To overcome this the profession must use every available means. The practitioners of medicine should have frequently the assistance of the surgeon, and vice versa; and both must use the roentgenologist, the clinician and the pathologist if they are to attain the success which they should and to which the public is entitled.

I want to consider, therefore, the acute surgical abdomen in this spirit of mutual helpfulness and incidentally urge greater harmony of action between physicians and surgeons. I am glad the other bureau reported first for we have had the medical side fully emphasized, direct and by comparison. Some of us care less for what the surgical bureau presents than for what is given by the Bureaus of Clinical Medicine and Materia Medica, and we are the ones usually who need to stop and consider the value of surgery. We need to listen to these discussions and read them in the Journal.

Doctor Bartlett has well and skillfully arranged conditions found in the abdomen which will do as well at least, if not interfered with surgically. No one should go to either extreme, but I want to call attention to some acute abdominal manifestations for the treatment of which surgery is imperative, and there are some, that are real anatomical catastrophies

to result fatally if prompt radical surgical measures are not exhibited. At the head of the list stand out prominently acute appendicitis, perforating gastric or duodenal ulcer and ruptured ectopic gestation. Add to these ileus, in its various manifestations, gunshot and stab wounds, injuries from heavy blows and crushings and the list becomes a formidable one. Not within the scope of my paper but as border line, medico-surgical stuff we can refer to embolism of the omental vessels and the less acute affections of the gall bladder, pancreas, stomach, kidney and ureters, bowels, large and small, appendix, uterus, tubes, ovaries, bladder and rectum, which may require surgery for a final complete cure. For differentiation, we need to consider also the gastric crises of tabes, ptomain poisoning and the referred pains: as from pleurisy, pneumonia, pericarditis and myocarditis.

As intimated, the chief consideration in the acute abdomen, the thing of prime importance, is a prompt, careful, scientific diagnosis. Impatience should not be the reason for substituting exploratory laparotomy for other means of diagnosis, but, exploratory operation saves many lives and over-conservatism should not prevent its use when other means have failed to satisfy and settle the diagnoses. Conditions within the abdomen are never fully revealed by external examination, but by touch and by sight only can we surely know the character of troubles we are investigating. I repeat that operations should not supplant less hazardous measures of treatment, but it is important to know that pain tenderness spasm and fever never mean "indigestion," "biliousness," "entéro-colitis," "liver and stomach trouble," or any of the old time terms or names of ailments which were pass-words for lack of investigation and laziness.

A knowledge of the topography of the abdominal viscera, familiarity with modern methods of physical examination, and an understanding of conditions to be found within the abdomen are demanded of the diagnostician of today. He will do well to associate himself with properly equipped specialists, as above noted, before assuming all the responsibilities that come with a surgical practice. He should also have served an apprenticeship, as an assistant to a competent practicing surgeon, in order to obtain the sound surgical judgment and great technical skill which are necessary to cope con-

scientifically with the difficulties which may arise suddenly in what appeared to be the simplest kind of a case.

The home-made surgeon, the one with no especial training, or the one who has had a course of a few weeks, may be able to open an abdomen, but he will not be able to promote public confidence as he should nor advance the interests of the art of surgery. There are many who say that operations for abdominal conditions are done too readily and too frequently. But statistics will show that operations are rarely done, by experienced surgeons, without adequate cause.

I have been sorry on occasions that I have not urged operation, but I have never regretted operating upon these very acute conditions of the abdomen. If a positive early diagnosis of appendicitis, for instance, is given, I know of no safe rule to decide that one should wait. The most important part of the practice of medicine is to know what ought to be done. In the second place, it is a satisfaction and pleasure to know how to do what needs to be done.

With the diagnosis made, with as little disturbance of the patient as possible, we are ready to proceed. In the acute abdomen you are likely to find symptoms such as these: In cases of perforation there will be shock (more or less) which may pass off in a few minutes and mislead the observer if he finds a normal temperature and the pulse 70 to 80, but soon the temperature will go up slightly, at least, and the pulse will increase in rapidity. The last is a very important point. The abdominal wall may be found retracted and does not move with respiration. The muscles may feel hard and board-like. The fact that the muscles do not relax on respiration is very suggestive of ulcer. The general aspect of the patient prognosticates some grave condition. Or, the patient may be restless and complain of great pain, may turn the head from side to side but does not roll and toss as in cases of biliary or renal colic. The body is kept still and usually the dorsal position is taken. If the skin on the surface of the abdomen is hypersthetic and light percussion causes further muscle spasm and the patient flinches and complains of great pains, the likelihood of peritonitis is great. In cases of abdominal wounds with cutting instrument or fire arms, the likelihood of visceral injury is so great that operation should be done immediately.

There is not the time nor the inclination to outline a full symptomatology of the acute abdomen, but when symptoms

such as have been noted are found the surgeon should arrange for operation at the earliest possible moment. No food or drugs should be allowed. Especially is the giving of morphia routinely for these cases unfair, at least previous to the time a sure diagnosis is made or it is determined to operate. Hot fomentations or cold applications to the abdomen are better. Salt solutions and cardiac stimulants are useful. In most emergency cases, however, there is no advantage in waiting.

I desire to report three cases to emphasize my points.

W. J. M., aet. 38, wholesale liquor dealer, not a whiskey drinker, ate heavily of lobster and other things on a Saturday night. On Sunday evening he had severe pain and vomiting. With the history of overeating as a guide, I prescribed for him feeling confident that he would be improved in the morning. Next day I found him worse with decided symptoms of acute lesions. He was removed to the hospital but was unwilling to undergo operation. The same evening he consented, but by that time his general condition was so bad that we refused to operate. He died a few hours later. The post mortem cleared up the diagnosis for us, namely, perforated duodenal ulcer. A conservative tendency, lack of fullest investigations and failure to demand the privilege of operating were our barriers to success.

B. V., school boy, aet. 12, was brought in with a history of having abdominal pain and distress for a week to ten days. The pain was localized and tumefaction was noted. Diagnosis, appendiceal abscess. Operation was done. The patient was subjected to a greater operative risk and also to post-operative complications which would have been prevented by an early operation. He had the greater suffering and the slow convalescence of the drainage case. He made a good recovery and returned to his home in Gettysburg apparently in good condition, except that he had a weak scar. In three months he returned with an acute bowel obstruction, caused by adhesions produced by the lengthy period of peritoneal inflammation before operation, and by the irritation of the peritoneum by the drainage material. He recovered nicely the second time from a clean operation and had as a result a strong abdominal wall, but the outcome of an early preliminary operation would have been more satisfactory.

Mrs. M. Came to the hospital in 1912, with the diagnosis of a ruptured tube due to extrauterine pregnancy. The

diagnosis was perfectly easy because of her shocked condition, distended abdomen, etc. On laparotomizing, we found the most terrible haemorrhage I ever saw. The distention was due to the presence of free, pure, arterial blood. The perforation was small and we were unable to get a clear field by removing clots with the hands, flushing with saline or by the use of towels for mops. We clamped the broad ligaments on each side in an attempt to control the bleeding, because we could not tell where the bleeding point was. Extra nurses were drafted and the anaesthetist was directed to give intravenous saline injection to hold the patient together. Her exsanguination was so complete that we had so much capillary oozing from the uterus—possibly due to large quantity of saline required—that a supra-vaginal hysterectomy was necessary to control haemorrhage. Our patient is well and hearty today, but these are the cases, friends, that make the attendants “sweat blood.” In conclusion:

(1) The acute surgical abdomen must be handled promptly by the surgeon.

(2) In border line cases, if in doubt, give surgery the benefit of the doubt.

(3) There must be thoroughly made diagnoses in conjunction with, if necessary, the pathologist, roentgenologist and clinician

(4) The co-operation of the practitioners of both branches of the profession (note the attitude of the legal profession in matters of consultation and the handling of cases jointly) if desirable.

DISCUSSION.

DR. R. V. WHITE, of Scranton: Dr. Hartman's paper offers such a tremendous field for discussion that one hardly knows where to begin. One of the very valuable features of this paper, in our opinion, is the plea for pre-operative diagnosis in surgical conditions. The general profession of medicine is holding the surgical branch responsible for a diagnosis in a reasonable percentage of cases. We cannot help but feel that more mistakes are made in the diagnosis (pre-op) in this particular type of cases—the acute surgical—than in any other. As an illustration, we might refer to three cases operated during the past winter. All had symptoms of abdominal disturbance coming on acutely and clinically supported the

diagnosis of acute appendicitis. In these cases a hurried leucocyte count was made and found to be markedly increased. Without any differential count these cases were operated and the pathology found did not substantiate our diagnosis. Two cases had just finished their menstrual epoch and we have since discovered that in many instances the leucocyte count shows an increase at this time.

Surgery seems to us to be a combination of science and art, and the proper combination is essential to success. While in many cases it may always be necessary to explore in order to establish the need for surgical intervention, I am satisfied that as the science of surgery increases, in contradistinction to its art, the exploratory type of operation will occur with less frequency.

The Doctor mentions the subject of shock. We find it more often here than in other conditions less acute, and it seems as though we frequently increase this condition in our effort to establish a cure. Yesterday I heard an essayist presenting a paper before another bureau, make the statement that the pathology of surgical shock was a constriction of the peripheral vessels and a falling blood pressure. At the time it was impossible to discuss this question but the thought came to our mind that this was not the pathology of shock, but only a symptom. To our mind the pathology of shock is located in the brain and cord, causing a stimulation and increased activity of brain cells and increased activity of brain and cord centers. Peritonitis as well as trauma, may be the exciting cause of shock; in fact, we feel that the symptoms are almost identical. Anyone who has followed the experiments and believes in the theories of Crile, will, I think, appreciate this statement. Shock can be greatly eliminated by following Crile's ideas of anoci-association and blocking off the nerves in the operative area by the use of novacaine or other products of a like character. Supplementing this with the use of morphia as a preliminary and nitrous oxide as an anaesthetic. Consistently then I must take issue with the essayist in his statement, "Do not use morphia in the treatment of peritonitis." My impression is that what the doctor meant to infer was: do not use morphia until after a diagnosis has been established—as it may mask the entire condition. Once a diagnosis has been established, there is no remedy so valuable as morphia. Again we wish to mention Crile's theories. The abdominal condition carries a stimulative impulse to these cells and centers in the brain and cord, and the free use of morphia prevents this. We mention the free use—giving an eighth to a quarter grain every hour or

so until the respiratory rate has been reduced one-half. This seems heroic and radical but it gets results. Other time-honored and valuable measures must also be instituted—the free use of fluids and hot packs, with posture. Our experience has proven that this method is most valuable in the treatment of peritonitis.

CLINICAL NOTES.

BY

C. I. WENDT, M.D., PITTSBURGH, PA.

(Read before Homœopathic Medical Society of Pennsylvania, Sept. 21, 1920.)

CASE 1. *Arthritis*.—H. G., age 52 years. Came into the office limping with pains in the ankles along the metatarsal bones, painful to walk, pains run up the leg in front. Ledum prescribed and a few days later came in using a cane. He was no better. The pains were worse at night. Knowing that he had had syphilis I put him on kali iod. 6x, and then on saturated solution, but the only result was that the next time he came in he used two canes. In going over his case I was impressed by the fact that pain in the heel and along the tendon achilles was prominent. Also knowing him for an old rounder I gave him five drops on tongue of medorrhinum 1000 (Skinner). Just before he left the office I told him that if he was much worse next day not to worry, but not to come back for one week. On the appointed date he appeared smiling and using but one cane. He said that the next day he was so bad he could not walk at all but remembered my warning. I gave him another dose and repeated it each week for four weeks. The next time I saw him he was on the streets in the rain, without an umbrella, said he had not had a symptom and now three years since tells his friends I cured him with six doses of medicine.

CASE 2. *Arthritis*.—K. M., age 30 years. She had been in bed three months under old school care, unable to do more than sit up in bed. So stiff in the legs that when you would bend the knees there would be a cracking sound like a rusty hinge, ankles and feet swollen, painful and stiff, stiffness so bad she could not move ankles or toes. She was fat, a brunette, well developed, apt to get melancholy, but not desirous of sympathy, restless. Nux vomica was given at first, then rhus tox

with no result. After coming back from my vacation in August during which time Dr. Boggess attended her I found her on sepia 1000. She was slightly improved, but not very much. After about a month she seemed at a stand-still, then one dose of medorrhinum 1000 was given, followed by an aggravation. After the aggravation was over went back to sepia and found that she needed a dose of medorrhinum about once a month. She was taken sick in May and soon was unable to leave her bed. Was in bed three months when I first saw her; out of bed in six weeks. In mid-winter (a very severe one) she could have gone out if streets had been free of ice. She still had pains in the soles of her feet, but could walk. By spring she could walk as well as anybody. It is now almost three years since, and she has never had any return.

CASE 3. *Proctitis and Enteritis*.—C. W. Ate cold fruit, followed by cramps and looseness of bowels. Arsenic 3x (one dose) helped but did not relieve burning and heavy uneasy sensation in the rectum. On the third day one dose of cup. ars. 3x was given and the sensation relieved in one hour.

CASE 4. *Proctitis*.—C. J. Millionaire patient says he has to jump out of bed at 5 A. M. to move his bowels. One dose of sulphur 30 cured him, bowels moved naturally and normally next day.

INFLUENZA OF 1920.

BY

ANNA JOHNSTON, M.D., PITTSBURGH, PA.

(Read before the Homœopathic Medical Society of the State of Pennsylvania, September 21, 1920.)

THE "Flu" of 1919 was one of the worst epidemics that has swept over our country in recent years. From its advent in Boston in the early autumn until it had worn itself out at the end of the winter, thousands had been swept away. The only bright spot in the whole epidemic was the wonderful results attained by our school in its treatment of the same. According to the statistics which we compiled last summer, our death rate was about .1 of 1 per cent. Those statistics as compared with 30 per cent. as the average mortality, were rather startling, and should have been given more publicity, if for no other reason than to point to the better method of treatment.

During the latter part of the past winter there was a return of the influenza, but it was neither of so virulent a character, nor of so long duration. At the beginning of the epidemic a number of hospitals in our city, ours, the Pittsburgh Homœopathic, among the others, tendered the use of one or more wards to the city, to which it might send its flu cases.

In all we treated forty-seven cases. I have reviewed the records of these cases, and found that in the general medical department there were no deaths; but in the obstetric department there were three. Of these three, one was brought in dying, having been under old school treatment, taking aspirin, acetanolid and digital. She only lived a few hours after being brought into the hospital. The second case was brought into the hospital while in labor, with a developed case of broncho-pneumonia, and the third case, also in labor, with a case of lobar-pneumonia, cyanotic, temperature 105, pulse 140, and respiration of 68, only living three days.

The blood counts in our flu were interesting, a leucopenia was found in all uncomplicated cases. The counts ran from 1450 to 7000, averaging about 5000; those running above were cases complicated with otitis media, adenitis, tuberculosis, and pregnancy.

The age of patients affected was below 40 with the exception of two, six were children.

The symptoms were typical, aching all over, general malaise, red throat, some with nausea, coryza, lachrymation, cough, fever ranging from 99 to 106; pulse from 84 to 112, unless in serious cases of pregnancy and broncho-pneumonia when it ran as high as 160.

The remedies most frequently used were in order of frequency: Gelsemium, bryonia, belladonna, phosphorus, aconite, iodine, ferrum-phos., china ars, causticum, eupatorium perf., nux-vom., sulphur, ars. iod., kali bich, tartar-emetic, sanguinaria, rhus-tox, phytolacca, lachesis, etc.

ROENTGEN-RAY TREATMENT OF ACNE VULGARIS.—A judicious application of the roentgen-ray, according to Semon, will cure acne. The nodular and keloid varieties of the disease are not amenable to relief or cure by any other method according to his conclusions. Relapse after apparent cure by roentgen-ray is rare, but should it arise, it can be controlled by further irradiation. There are no permanent contraindications to the treatment by roentgen-rays.—*British Medical Journal*.

**A CASE OF ENDOTHELIOMA OF THE POSTERIOR FOSSA WITH SPECIAL
REFERENCE TO THE OTOLOGICAL FINDINGS.**

BY

JOSEPH V. F. CLAY, M.D., F.A.C.S.

M. G., a male, age 53 years, was admitted to the Hahne-mann Hospital, September 18, 1917, complaining of pain in the left side of the head, nose bleed, recurrent vomiting, failing vision and deviation to the left when walking. The headache, which had existed for two years, was localized in the left parietal region.

The neurological examination was made by Dr. W. L. Hicks, who found the patient conscious and presenting a right exophthalmus, anaesthesia of both corneae, the pupils large, the left larger than the right, but both reacting to light. There was a paresis of the right rectus muscle. Nystagmus was noted in the lateral direction to both sides, but worse when patient looked to the left. The left side of the face drooped and the tongue deviated to the right with a fine tremor. The dynamometer registered right 30, and left 23. The tactile sense was normal. The abdominal, epigastric and cremasteric reflexes were absent, the patellar and plantar reflexes were normal. The Gordon and Oppenheim reactions were absent. There was no ankle clonus.

An ophthalmological examination was made by Dr. P. A. Tindall who found the vision in both eyes 20/30, an esophoria of two degrees and a right hyperphoria of one degree. The visual fields presented a concentric contraction for white and colors in rotation; retinal fatigue caused some variability. The fundus showed the retinal vessels smaller than normal, some tortuosity, but no sclerotic changes and no hemorrhages. The disc edges were indistinct and apparently swollen but not appreciable by lens measurement.

The Wassermann and urine tests were negative. X-ray examination of the head was made by Dr. J. W. Frank, who reported a deformity in the posterior clinoid processes of the sella tursica.

The ear examination was made October 4, 1918, and showed the cochlear function to be intact. The patient presented spontaneous pastpointing to the left with the left hand and to the right (to a lesser degree) with the right hand. Stimulation of the horizontal semicircular canals by turning to the

right produced a horizontal nystagmus to the left lasting twelve seconds. (The normal being 26 seconds). The right arm under this stimulus pastpointed normally to the right. but the left arm pastpointed to the left, whereas, normally it should have pastpointed to the right.

Stimulating the horizontal canals by turning to the left produced a horizontal nystagmus to the right lasting 22 seconds. The right arm pastpointed normally to the left as did also the left arm, but the left arm continued pastpointing to the left after the effect of the stimulus of turning had ceased.

Stimulation of the right vertical semi-circular canals by douching with water at 68 degrees produced, after three minutes, a mixed horizontal nystagmus to the left with a decided vertical element. The pastpointing of both arms in this instance was to the left.

Stimulation of the left vertical canals with water at 68 degrees produced no nystagmus and no pastpointing with the right arm, the left arm pastpointing to the left in keeping with the spontaneous pastpointing noted before.

We were unable in any instance to make the left arm pastpoint to the right.

Our otological observations from the reactions above noted indicated that we were dealing with an intracranial lesion located in the posterior fossa on the left side extending to the media line. This opinion was given.

The patient was discharged from the hospital and passed from our observation to the care of Dr. Earl B. Craig. The patient died February 22, 1918, almost five months after our examination.

Autopsy was performed by Dr. Samuel W. Sappington.

The brain was removed from the skull without difficulty. The cerebellum on the left side was apparently adherent but after the brain was removed it was found that the mass remaining in the skull was a round rather smooth well encapsulated tumor apparently springing from the parietal dura in the left side. This tumor had caused a pressure absorption of the entire left cerebellar hemisphere and encroached upon the pons and medulla. These latter structures, however, were normal. The great brain presented nothing abnormal.

Dr. Sappington made a histological study of the tumor and we append herewith his description:

"Histologically the tumor is a typical dural or meningeal

endothelioma, showing a characteristic whorled arrangement in which the flattened and spindle cells, in bundles and strands, interlace or form concentric layers around a small or closed central lumen. There is no central calcification, however, as in psammomas."

ATYPICAL TEMPERATURES FOLLOWING OPERATIONS UPON THE NOSE AND THROAT.

BY

WILLIAM G. SHEMELEY, JR., M.D., PHILADELPHIA, PA.

(Read before the Homœopathic Medical Society of the County of Philadelphia,
May Meeting, 1920.)

THE after-treatment of any operation upon the nose or throat is of equal if not greater importance than the ability to perform the operation itself. The general practitioner of medicine is frequently called upon to assume the care of patients who have had operative work upon the nose or throat, or both, and as an aid to this the writer has selected as the subject that of an Atypical Temperature Following Operations Upon the Nose and Throat. As has been suggested and urged in former papers, every practitioner of medicine should familiarize himself with the use of the simpler instruments used in the diagnosis of pathological conditions of the nose and throat. In order that diseased conditions may be recognized, the opportunity should be embraced to examine the nose and throat of every case requiring a general examination. Having determined upon this as a routine procedure, the general medical man will be amazed at the many obscure diagnostic points he will chance upon.

When he has become familiar with the appearance of the nose and throat, regarding color, conformation, appearance of the turbinates, amount or lack of breathing space before and after shrinking of the turbinates, the general practitioner will be better prepared to determine the cause of an atypical temperature following operation upon the nose and throat.

External Nasal Surface.—Practically the only operative work upon the external nasal surface is that performed for the removal of tumors. Here the problem of mixed infection following faulty aseptic and antiseptic technique is the one

most frequently met. A mixed infection may result in the production of an abscess or an erysipelatous infection. The localizing character of an abscess, the appearance of the adjacent wound surface, the absence of marked systemic disturbance and the presence of but a very slight amount of temperature will serve to differentiate abscess from the more severe infection of erysipelas.

Internal Nasal Surface.—Just within the nasal aperture furuncles frequently occur. Often these require free incision. Following this, one expects the condition to rapidly subside. If, instead of this, a condition of aggravation ensues, one of two conditions will, no doubt, be found to be present. Either a mixed infection has occurred, or else a re-infection has taken place, with the production of another boil. In the latter case the presence of the furuncle will serve to diagnose the condition, while a mixed infection will be demonstrated by the changed appearance of the wound, and the character and amount of the discharge. A slight rise of temperature may be present in either case.

Operation Upon the Turbinates.—The middle turbinate is the one most often operated and since this is frequently done in the presence of pus from a purulent frontal or maxillary sinusitis, the possibility of complications is increased.

The presence of an atypical temperature following turbinate operations will necessitate a differential diagnosis from mixed infection, erysipelas, and the coincidental occurrence of some acute infectious disease.

The presence of mixed infection will be shown by the changed amount and character of the discharge. The surrounding tissue will also show an increase in inflammation, making allowance for normal reaction. Fever will either be absent or very slight. However, in erysipelas the problem at once becomes complex, for in the incipient stage septic cellulitis partakes of many of the symptoms of an acute infectious disease, such as influenza or tonsillitis. In the case of infection of the cellular tissues the local reaction should serve to distinguish this condition from that of influenza, while an examination of the throat should prove the diagnosis of tonsillitis.

Operations Upon the Septum.—Following operation upon the nasal septum one does not expect a temperature over 99.3 in uncomplicated cases. Should it rise above this limit one,

as a rule, must differentiate the condition from the following:

- (a) Mixed infection.
- (b) One of the acute infectious diseases.
- (c) Occurrence of some middle ear complications, or some sinus condition or "flare up" of a latent sinusitis.
- (d) Syphilis.
- (e) Tuberculosis.

The change in the normal post-operative appearance of the septum, together with the mild course of the temperature, should serve to distinguish a mixed infection from an acute infectious disease unless the infection should prove to be erysipelatos, in which instance the early recognition of the cause of the atypical temperature produced is not always easy.

The appearance of the region from which drainage of the frontal sinus takes place should serve as a clue in the detection of a frontal sinusitis.

The appearance of the tympanic membrane and the result of the tuning fork tests should serve to diagnose a middle ear abscess.

The mistake has often been made of diagnosing a bilateral deflection of the nasal septum when the case was one of gumma as the result of an unknown or neglected syphilis. The temperature is usually slight but of a persistent character, in which respect it resembles mild tuberculosis.

Since the ordinary complications that may cause an atypical temperature following operation upon the maxillary ethmoid or frontal sinus are more or less analogous to those described under preceding conditions, no further mention of them will be made. However, two things may occur which will cause a great deal of anxiety to the physician; first, orbital cellulitis, manifested by tenderness, involvement of the extra-ocular muscles and extreme proptosis; the ophthalmoscopic examination will show a blurring of the disc edge, especially to the nasal side. Second, the extension of the disease to the meninges with resulting meningitis.

Operations Upon the Sphenoid.—An atypical temperature may frequently be caused, following operation upon the sphenoid, by the existence of some anatomical anomaly, or as the result of faulty instrumentation. The former is prone to cause an invasion of the meninges while the latter frequently is productive of an optic neuritis. Optic neuritis may be recognized with the ophthalmoscope. There will be seen a blurring

of the disc edge, especially to the nasal side, together with an overfilling of the retinal veins.

Throat: Adenoidectomy and Tonsillectomy, Evacuation of Peritonsillar Abscess.—A temperature in excess of that expected following operation upon adenoids or tonsils may be the result of the co-incidental occurrence of some acute infectious disease—a mixed infection; a post-pharyngeal abscess; a middle ear abscess and mastoiditis; a septic pneumonia due to breathing into the trachea of septic material squeezed from the tonsils or from the pus escaping from a peritonsillar abscess, especially if a general anesthetic has been used.

The occurrence of a post-pharyngeal abscess may tax the physician's diagnostic ability, and it will frequently not be diagnosed until the condition is well developed. In the presence of a persistent pus temperature following adenoidectomy, one should be suspicious of post-pharyngeal abscess, providing they have first ruled out other probable causative factors.

The physician will, no doubt, have his attention directed to a middle ear abscess or a developing mastoiditis, by the symptoms complained of, the various clinical tests, and the findings of the radiograph.

The co-incidental occurrence of one of the acute infectious diseases will, no doubt, be diagnosed by the rapidity with which the conditions develop, the character of the symptoms, and the degree of temperature which will be out of proportion to the appearance of the operated region.

A diphtheria following a tonsillectomy often causes the greatest difficulty in diagnosis, since following the operation the tonsillar fossae are covered with an exudate which resembles that of diphtheria.

The usual post-operative exudate tends to progressively disappear and is easily removed. Any exudate which separates with difficulty, plus an atypical temperature, should be viewed with suspicion, and at least should merit a bacteriological examination.

Following operations upon the nose and throat, as elsewhere in the body, an atypical temperature should cause the physician promptly to exclude the possibility of a post-operative pneumonia. The fact that septic material may find entrance into the trachea and thus cause a septic pneumonia should be remembered, for to be forewarned is to be forearmed.

The operator and anesthetist, awake to this possibility, should strive to prevent its occurrence.

We are all toilers in the great and wonderful field of medicine. Only by the most careful and painstaking attention to details can we hope to reap a harvest in these fertile fields of diagnosis.

In every case that is under your care presenting an atypical temperature following operation upon the nose and throat, the writer urges upon you the necessity of the most careful eliminative diagnosis, for the proper diagnosis may result in saving the life of the patient.

The writer wishes to thank the Society for the opportunity of presenting this paper.

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NASAL INFECTIONS AND OCULAR LESIONS.—Potts points out the limitations of the value of the X-Ray in deciding if nasal disease exists to account for ocular symptoms. The findings of the oculist are needed to enable the rhinologist to decide whether slight deviations from the normal in the nose should receive more attention than the mere appearance of the parts might suggest. Potts classifies the ocular disturbances arising from disease of the nose and sinuses as follows: Those due to metastatic infections, those arising from continuity, and those that are trophic and irritative. Metastatic infections are increasingly important with the development of pus in the sinuses; direct continuity accounts for the association of optic nerve disease and retrobulbar neuritis with disease of the sphenoid and posterior ethmoid cells, and also of orbital cellulitis, phlegmon of the orbit and disease of the lacrimal canal and sac, with disease of the anterior ethmoid, antrum or frontal sinus. The trophic or irritative include eczematous inflammations of the lids and conjunctiva, photophobia, blepharospasm, corneal ulcer, ocular pain and reflex neuroses. These may arise from pressure of a spur or deviated septum, and an apparently innocent middle turbinate may swell at night or at other times, and cause much trouble.—*American Journal of Ophthalmology*, Vol. 3, p. 195.

EDITORIAL

FOOD AND DISEASE.

PRIOR to Eijkman's discovery of the cause of beriberi through his feeding experiments upon pigeons in which he noted that they became paralyzed when fed upon decorticated rice, the true nature of the so-called deficiency diseases was not even suspected. It is true, that for many years scurvy was known to be due to a diet from which fresh vegetables were eliminated but it was believed that the pathological manifestations of this disease were due to either chemical or bacterial poisons which developed in stale and preserved foods. With our present knowledge of the vitamins, however, the deficiency diseases occupy a new place in clinical medicine and the remarkable fact, namely that disease may result from the absence of certain elements in the diet as well as from the presence of noxious chemical substances, is now established beyond all peradventure.

Some of the deficiency diseases present clear-cut clinical manifestations, for example, scurvy and beriberi. Many obscure alterations of nutrition, however, and many functional disorders which are often regarded as neurasthenic or imaginary, or as dyspepsia and simple malnutrition will on closer study resolve themselves into evidences of a deficiency syndrome. Ever since the word vitamin has become a popular and well-known name in medical and popular writings many fallacies and fads have been born from an improper understanding of the subject, and the science of dietetics has again found itself in danger of being wrecked by the fakir and crank. Much harm can be done by spreading of false doctrines in dietetics; foods of inferior quality and nutritional value are lauded to the skies and are popularized while others which are not only perfectly good foods but actually necessary constituents of our daily diet are tabooed.

The potato is an excellent example of such a food. People are told that "potatoes are fattening, that they are too starchy and, therefore, cause gas, indigestion and gastritis; they are constipating; they have little food value." All of which is untrue and scientifically incorrect. Hess (*Newer*

Aspects of Some Nutritional Disorders, Jour. A. M. A., March 12, 1921) calls attention to the interesting fact that the development or non-development of scurvy depends largely upon the potato crop. This has been clearly shown in Ireland and in Norway and to a less degree in the United States. He says, "The great nutritional value of the potato has not been explained. Its protein has been stated to be of inferior quality and it is poor in water-soluble and in fat-soluble vitamins. Nevertheless, the practical dietetic experience of nations and the prolonged investigations of Hinhede prove that it is a food of exceptional value." As to its starchiness, the potato contains only about one-third as much carbohydrate as bread. The diabetic and the dyspeptic can, therefore, take it with greater safety than they can take the equivalent amount by weight in bread. So much for the fallacy about the potato.

Aside from the vitamins, foods must also supply certain chemical substances in order to maintain a normal, healthful metabolism. The matter of foods is analogous to the subject of soils, fertilizers and plant life. Without a proper amount of lime, phosphorus and potash, we can no more thrive than we can without vitamins. Dietetics is, therefore, too serious a matter for the amusement of the faddist and it is too important to the health and efficiency of the community to permit the food fakir to exploit the unsuspecting and gullible public.

C. S. R.

THE TREATMENT OF BICHLORIDE POISONING.

FOR a number of years the stock treatment of poisoning by mercury and its compounds has limited itself to the use of washing out of the stomach, and administration of egg albumen as a chemical antidote. Notwithstanding the energy with which these measures have been pushed, results have been far from satisfactory. In theory, washing out of the stomach is sound practice. When it comes to actual workings it is virtually useless for it has been demonstrated with a fair degree of certainty that by the time a physician reaches the patient (even if it is within fifteen minutes) scarcely any of the poison remains therein. Furthermore egg albumen as a chemical antidote has never been satisfactory, for while given in a proper

amount it will produce the insoluble albuminate of mercury, if given in excess it will render the mercury soluble once more. Inasmuch as the physician can never know what quantity of mercury still remains in the stomach, it would appear to be impossible to estimate the efficient dosage of egg albumen. Of late years calcium sulphide has been recommended. This agent coming in contact with the bichloride solution produces an insoluble sulphide of mercury and no excess of antidote is capable of re-dissolving the precipitate, hence it should prove to be an efficient antidote; the objection to it, however, is that by the time it is introduced into the stomach the latter organ is empty and any antidotal influence of calcium sulphide depends upon its absorption into the circulation.

About three years ago one of our younger men, J. H. Willms, of Cincinnati, made some elaborate experiments covering this subject, published in the *Journal of Clinical and Laboratory Medicine*. The plan of treatment is beautifully simple, so simple indeed that the physician is only too likely to make efforts at improving it or making it look complicated, thus defeating his purpose. Its very simplicity is a testimonial to its efficiency. Of the last fourteen cases of poisoning treated at Hahnemann Hospital but one patient died, and that one took over 140 grains. One patient who recovered had taken 49 grains. Of those who recovered not one had nephritis.*

The treatment as carried out was this: An intravenous administration of sulphide calcium in the proportion of 1 grain to the ounce in sterile water was employed promptly on the admission of the patient. The total quantity of calcium sulphide used was 1 grain for every grain of bichloride supposed to have been taken.** The main care in the preparation of the sulphide solution was the avoidance of small particles of calcium sulphide held in suspension and not evenly enough divided. These can very readily be taken out by passing through some loosely packed absorbent cotton in a filter. Following the intravenous, the patient is given 1 grain of calcium sulphide, sometimes more, by the mouth every hour for several days. Such is the treatment.

No attempt should be made to mix the sulphide with normal saline solution, as such most unquestionably would

* Where the dose of poison is very large we may use as much as 4 grains of calcium sulphide to the ounce.

** Since writing the above we have had one case which had taken over 230 grains. Admitted within three hours. She died in four days.

interfere with the chemical reaction. No time should be lost by preliminary washing out of the stomach. No attempt should be made to add any details which the imagination or ingenuity of the physician may suggest. It is simply a question of getting sufficient calcium sulphide into the circulation as quickly as possible. And that is all there is to it.

DR. CHARLES E. SAWYER.

THE recent dual appointment of Dr. Charles E. Sawyer by the President as personal physician and as head of a department of health and welfare has made the Doctor the most prominent figure in the medical profession of the country. As such he has been made an important subject for discussion in all circles. As personal physician, the President has acted wisely, as Dr. Sawyer and he have been close associates for many years, for in addition to being dear friends, Dr. Sawyer has been to the President all that the term signifies, namely, his family medical adviser. Great men and wealthy men occupy a peculiarly unfortunate position when ill. Outside interference demands that their medical care be supervised by eminence of attendants and strict conformity to the most recently exploited scientific ritual conventionally enforced and defying all rules of rest for the sick and of common sense. The appointment of a man who knows his patient thoroughly precludes any possibility of a perpetuation of a folly that has ever been the subject of quiet but impersonal criticism of current methods. Aside from the fact that circumstances have made Dr. Sawyer the fitted man, may be mentioned his scientific attainments as a physician and his common sense.

Dr. Sawyer is equally well fitted to be the head of any executive work having a bearing upon medical matters. As an example of dynamic energy combined with systematic performance, he is bound to produce results. His experience in general and sanatorium practice and in the organization of the affairs of our medical societies, and last, but by no means least, his career in the National Council for Medical Defence and as President of the American Institute of Homœopathy, lead us to expect great things with but little chance of being disappointed.

THE MAN'S BELT AS CAUSE OF GASTRIC DISTURBANCE.

FROM time immemorial the humorous paragrapher, the medical fraternity and uplifters of the human race generally have expended considerable energy in criticising women's corsets, alleging this particular article of apparel to be a very important cause of ill health; but no one, so far as I know, has seen fit to attack the belts worn as trouser supports by the men. As a matter of fact, there is every reason to believe that these are as much, if not more, harmful than any corset ever devised. For many years we have noted the above fact in practice, and we have found in conversation that there are many physicians who agree with us in our conclusion.

When we recommend men to forego the belt and take to the suspenders, we get the old excuse, "Suspenders annoy me." After all, it is a mere matter of habit.

A rather novel cause of dermatitis between the thighs recently came to our notice. The patient had the habit of hitching up his trousers every few minutes and thus irritating the perineum and contiguous parts. The wearing of suspenders and the proper draping of the trousers led to prompt recovery.

DISEASED TEETH AS THE CAUSE OF CONSTITUTIONAL DISEASE.—A Protest. Under the title "A Gospel of error," Dr Kells, a dentist of New Orleans, presents a logical protest against indiscriminate tooth extraction, claiming that for every case cured by this so-called occult infection that there are hundreds if not thousands, where complete failure results, and people needlessly deprived of useful teeth. He summarizes as follows:

1. A tooth with a devitalized pulp is not dead; it continues to be a *vital tooth* just so long as it receives nourishment from its peridental membrane.
2. Alveolar abscess can be cured just as pneumonia or measles can be cured.
3. Teeth are a valuable asset; are necessary for mastication and from a cosmetic point of view.
4. A radiolucent area may be infected—it may be sterile.
5. Infection cannot be determined by the X-ray.
6. No one but a dentist should advise the extraction of a tooth.
7. It is true that "wonderful cures" have resulted from the extraction of *some* diseased teeth, but what of the countless thousands of good teeth extracted with no beneficial results following?—*New Orleans Medical and Surgical Journal*, March, 1921.

GLEANINGS

MEDICINE

Conducted by CLARENCE BARTLETT, M. D.

FALLACY OF DEPENDING ON A SINGLE TEST FOR KIDNEY FUNCTION.—Englander considers that renal function is always treacherous and always the concern of the operator, particularly so when the kidney or inter-related organs become the object of surgical attack. In an investigation of statistics by B. A. Thomas, the mortality for major operations in the genito-urinary tract was found to be seven times as great in the hands of the general surgeon as in those of the urologist. Hence Dr. Englander warns the general surgeon that if he would avoid his rather formidable list of fatalities after operation in the genito-urinary tract he must very carefully study the functional efficiency of the kidneys, as attention to this consideration often accounts for the difference in the death rate of operations performed by the general surgeon and the urologist. According to Dr. Englander the general surgeon is still submerged in a lot of hide-bound technicalities, armoring himself against certain dangerous operative difficulties or concerning himself with the prevention of post-operative complications, while altogether neglecting the most essential points—the knowledge of renal efficiency.

In conclusion he presents the following shortcomings of the phthalein test as follows: Reflex anuria due to presence of the catheter; leakage around the catheter; stoppage of catheter by mucus, pus or blood; occasional impossibility of finding ureteral opening in trabeculated bladder or ulcerative condition of bladder; possibility of carrying infection upwards, and in closing says: 1. Kidney functional tests are absolutely indispensable in urologic surgery. 2. Reliance on tests of retention or of excretion alone may result disastrously, and should always be combined. 3. The urea test of retention and phthalein and indigo carmine for test of excretion are the simplest and most reliable.—*The Ohio State Medical Journal*, February, 1921.

TUBERCULOSIS FROM THE STANDPOINT OF A POST MORTEM.—Robertson, speaking on this subject, noticed a case upon which he had recently performed an autopsy, the patient being a woman 57 years of age. She had suffered in childhood from Pott's disease of the spine, which appeared to have become arrested at the age of 12. For forty-five years she lived without experiencing or revealing any evidences of active tuberculous foci. She finally died of general arteriosclerosis and angina pectoris. The lymph nodes at the bifurcation of her trachea contained calcareous and caseous masses, while adjoining these were young growing tubercles which had evidently sprung into activity only at a very recent date. This illustration gives a basis for the statement that once infected with tuberculosis the patient can never be positively assured of absolute freedom from its recurrence. It thus well behooves the entire race to live under such safe hygienic conditions that this specific and real menace to its existence may be reduced to its lowest possible terms.—*The American Review of Tuberculosis*, February, 1921.

THE ACTION OF CASCARA SAGRADA.—Valuable though cascara is as a remedy, it is only too frequently misapplied in practice. The mistake is that it is too often given in excessive doses with the idea of making it do the work of a cathartic. McGuigan, of Chicago, has made very interesting experiments with the drug and has demonstrated most conclusively that such use of cascara produces most unpleasant effects, such as griping, nausea and with excessive doses, vomiting with a presence of discomfort for several days. The abstractor agrees with Dr. McGuigan's summary, which is as follows:

Large doses of cascara sagrada may produce an inflammatory condition of the bowel, with pronounced nausea and griping. The nausea may be produced by the therapeutic doses recommended in some textbooks. It only rarely leads to vomiting. Cascara should be used only as a laxative, never as a cathartic. When more than 2 c. c. of the fluidextract is needed to produce a laxative effect, another drug should be added or substituted. Small doses several times a day seem to give better results than the sum of these doses given in a single dose.—*The Journal of the American Medical Association*, February 19, 1921.

SILVER SALVARSAN IN THE TREATMENT OF SYPHILIS.—Walson, after a discussion of many practical points concerning silver salvarsan from fundamentals to complete technique, presents a thorough review of literature and his own experience with the drug and discusses the same. He then summarizes as follows: (1) Silver salvarsan is the strongest spirocheticide, as well as being the least toxic of the arsenobenzol preparations, according to results obtained from animal experimentation, that has yet been introduced, and nothing has so far developed in its clinical application to contradict these observations. (2) Silver salvarsan deteriorates rapidly when exposed to the air, and this deterioration is recognized least when the silver salvarsan is placed in solution. (3) Technique of administration requires (a) strict antisepsis; (b) freshly distilled water in the proportion of 10 c. c. to each one-tenth grm. of silver salvarsan; (c) silver salvarsan powder must be completely dissolved before administration; (d) proper precaution to prevent extravasation of the silver salvarsan solution into the surrounding tissues is essential; (e) slow administration, i. e., not less than one minute. 4. If silver salvarsan is used alone probably the best treatment based on results reported in recent literature is as follows: Begin the treatment with one-tenth gramme of silver salvarsan, increase dosage to two-tenths grm. for women and twenty-five one-hundredths for men as a maximum dose, with an interval between doses of four days, and never give more than two grms. in any one month. 5. The results obtained in primary syphilis on the Wassermann reaction are as good if not better than any other arsenobenzol preparation used in combination with mercury. 6. The Wassermann reaction reversed to negative as rapidly in secondary syphilis with mercury and silver salvarsan as in any other arsenobenzol preparation with mercury. 7. Mercury should be given with silver salvarsan in the treatment of syphilis. Whether or not it should be given at the same time or following the silver salvarsan is another question. In military service it is necessarily desirable to give at the same time. 8. The effect of silver salvarsan on all clinical manifestations of syphilis is decidedly rapid, and appears at least as effective as that of any other arsenobenzol preparation. 9. Alarming effects of silver

salvarsan were never seen in any of our cases. 10. Constant vigilance in the administration of all arsenobenzol preparations is essential. Particular attention should be given to patient's weight, a beginning erythema, functional kidney and liver tests. 11. Kolle, Galewsky, Hauck, and Gennerich appear to be of the opinion that silver salvarsan is better than any other salvarsan preparation. Boas, Kissmeyer, and Muller seem to think that silver salvarsan is on a par with salvarsan. Dreyfus, Kerl, Schoenfeld, Birnbaum, Bruhns, Lowenberg, and Goldberger think that silver salvarsan is better than neosalvarsan. Hoffman, Knopf, Scholtz, and Sinn prefer salvarsan to silver salvarsan. Von Notthhaft says he obtained better results from silver salvarsan than from other salvarsan preparations. Friedlander, Sellei, and Hahn speak of very good results from silver salvarsan; Febyr says it might well be called upon to supplement or supplant neosalvarsan.

The conclusions presented after the above analysis were: 1. Give mercury with silver salvarsan until it has been definitely proved that mercury is unnecessary. 2. Energetic and intensive silver salvarsan and mercury treatment are indicated in early primary syphilis during the prepositive Wassermann period. 3. Silver salvarsan in so-called abortive treatment of syphilis is not so dangerous as other arsenobenzol preparations. 4. The literature on silver salvarsan and our own experience with this preparation warrant the further continuation of its use.—*American Journal of the Medical Sciences*, March, 1921.

THE IMPORTANCE OF RECOGNIZING AND TREATING NEURO-SYPHILIS IN THE EARLY PERIOD OF THE INFECTION.—Fordyce concludes his paper by remarking that a definite and constructive plan for the prophylaxis of the degenerative stage of syphilis of the central nervous system and its treatment in the early stages can only be devised by a study of the infection in its inception. Our clinical and serological work during the last ten years have enabled us to formulate the following propositions:

1. Syphilis of the nervous system probably begins in the first year of the infection. The number of cases corresponds roughly with the total number of cases of so-called late neurosyphilis. The foregoing statements are based on the following observations and established facts: (a) The number of early cases showing positive findings in the spinal fluid; (b) familial types of neurosyphilis; (c) biologic evidence of a neurotropic strain of the treponema; (d) persistence of the infection *in loco*, as in aortitis, interstitial keratitis, etc.; (e) observation of patients who developed signs of early syphilis of the nervous system and who after many years died of paresis or other late degenerations; (f) no serologic evidence as yet exists showing normal spinal fluid in the early stage and its infection at a later period.

2. Early neurosyphilis may manifest itself by obtrusive symptoms, by slight objective signs or be asymptomatic. Treatment by the usual channels may control obtrusive symptoms. It seldom cures the underlying infection. Symptoms at times develop during or shortly after intensive courses of arsphenamin and mercury. If not cured, these early infections may persist and cause late neurosyphilis.

3. Acceptance of the foregoing propositions leads to the logical deduction that no case of syphilis should be discharged without the knowledge gained by examination of the spinal fluid. In case no evidence of infection is found, a prognosis of probable future immunity may be made. If infection

exists, it should be treated by methods shown by experience to be effective.

4. We are convinced by an experience of seven years in the use of intraspinal therapy that practically all cases of early neurosyphilis can be cured more rapidly and in the majority of cases only cured by the combined intravenous and intraspinal method.—*American Journal of Medical Sciences*, March, 1921.

PULMONARY SEQUELS OF INFLUENZA.—Fishberg remarks that in many patients attacked by acute epidemic influenza certain sequels are left in the respiratory tract after the acute disease has run its course. A large number remain with subacute rhinopharyngitis; some with a general bronchitis, and now and then we meet with patients in whom the residual lesion is a localized bronchitis. When the latter affects an upper lobe of a lung, it is very difficult to differentiate from pulmonary tuberculosis. When these sequels are instrumental in keeping the patients weak and debilitated for weeks or months, which is often the case, this in addition to the cough and expectoration, may lead to a diagnosis of pulmonary tuberculosis. More serious pulmonary complications are bronchiectasia and lung abscess, which have increased in frequency since the last epidemic of influenza. Bronchiectasia remains in cases in which influenza was complicated with pneumonia or pleurisy, or both. The diagnosis is at times very difficult mainly because of the ancient notion that influenza is a strongly predisposing factor to tuberculosis. When the lesion is found strictly localized in one of the lower lobes of the lungs, tuberculosis should be excluded for this reason alone. In those in whom the lesion is in an upper lobe, only repeated sputum examinations decide, though the fact that the disease began with an influenza, that emaciation is not pronounced, that fever is lacking, the pulse rate is normal, and that there is obtained clear resonance above the clavicle, etc., should be counted against tuberculosis. The more severe lesions in which pulmonary abscess remains after influenza, the diagnosis may be made along the same lines as in bronchiectasia, and in addition notes should be made of the fact that the sputum is abundant, at times fetid, the fever continuous or undulating, the pain in the chest and the physical signs, all of which combine to clear up the diagnosis. If several examinations of the sputum fail to disclose tubercle bacilli, the diagnosis may be safely made. Leucocytosis with an increased proportion of polynuclear cells has the same significance.—*American Journal of the Medical Sciences*, March, 1921.

ROENTGENOLOGY

Conducted by WALTER C. BARKER, M. D.

X-RAY TREATMENT OF TONSILS AND ADENOIDS.—W. D. Witherbee's (*American Journal of Roentgenology*, Volume viii, No. 1, January, 1921) paper is based upon the results of a series of sixty cases, ranging in age from sixteen months to fifty years. Some of the cases had but a single dose of X-ray, while others had divided ones, but none received as much X-ray as is used in the treatment of ringworm of the scalp. Careful histories were made of all cases, and they reported weekly for observation. Blood counts were made, and the contents of the crypts were examined on cultures and the colonies counted. Drawings were made to compare the appearances of the changes in the tonsil.

The effect of the X-ray was to decrease the size of the tonsil and to evacuate the crypts. The author called attention to the fact that pathologists concede that the increase in the size of the tonsil is due to an increase in the lymphoid tissue. After operation for the removal of tonsils which had been rayed, it was found by microscopical examination that it was the lymphoid cells which had undergone atrophy. Thirty-two out of thirty-six cases which were examined for pathological bacteria, four weeks after one massive dose of X-ray, were negative.

The author illustrated his technic and showed a board so constructed that the patient was held in a position which would allow the rays to pass through the tonsil on one side and be directed so as to pass through the tonsil on the opposite side. The proper protection to the patient was also described. The dose was stated in various factors, but none of these equaled more than one skin unit of filtered rays through three millimeters of aluminum. A warning was mentioned to those not familiar with all the factors entering into the dose of the X-ray treatment, not to attempt the use of these rays before they thoroughly understood the apparatus, and the method of measuring the dose accurately.

In conclusion, the author said, it would seem probable that X-ray treatment should be indicated in cases of diseased tonsils and infratonsillar lymphnodes, associated with endocarditis, pericarditis and hemophilia. Also in cases following tonsillectomy, in subjects over six or eight years of age and especially in adults, where there still remains a considerable amount of pathogenic bacteria in the infratonsillar lymph nodes and crypts, the X-ray will prove of value.

SURGERY

Conducted by J. D. ELLIOTT, M. D., F. A. C. S.

METHODS TO SECURE END-TO-END SUTURE OF PERIPHERAL NERVES.—Naffziger finds that with improvement in operative procedures end-to-end suture of nerves, even with considerable defects, has become more often possible, and that these results are much more satisfactory than those obtained by filling in defects with various substances. When the latter is necessary the most rational method is by use of free nerve grafting from the same individual.

The methods the author has found to be most useful in obtaining apposition of the divided nerve ends are: free mobilization of the proximal and distal portions of the nerve. This requires free inspection and careful loosening of the trunks over long distances and cannot be done through a short incision. Transposition of the nerve to a shorter route than the normal one. Favorable posture of the extremity to shorten the distance to be overcome. Gradual lengthening of the nerve by a two-stage operation. This last procedure has succeeded in several instances where the nerve ends could not be brought together at the primary operation.

From operative experience and anatomical studies and measurements the belief is expressed that the average distance which can be bridged in the more important nerves is as follows: For the ulnar nerve, mobilization alone permits of suture after a 3 centimeter gap; after mobilization and transposition 4.5 centimeters. Adduction of the arm to the side permits

a slight additional gain; with mobilization, transposition, adduction, and complete flexion of elbow and wrist, 10 centimeters.

For the musculospiral, mobilization alone permits 2 centimeters; mobilization with elbow flexion, 8 centimeters; with mobilization, elbow flexion and adduction, slightly more, usually about 8.5 centimeters; mobilization, transposition, elbow flexion and adduction, 10 centimeters.

For the median nerve, mobilization 2 centimeters; mobilization, adduction and elbow flexion, 9 centimeters.

For the sciatic nerve, and the internal and external popliteal trunks, mobilization 3 centimeters, mobilization, extension at the hip and flexion at the knee 9.5 to 10 centimeters.

These figures represent distances which may be bridged at one stage operations. With two stage performances, additional gains may be made. —*Surg. Gyn. and Obstetrics*, March, 1921.

RESULTS OF OPERATION FOR VARICOCELE.—Douglass calls attention to the frequency of hydrocele following removal of varicocele, the importance of this complication having been overlooked in most text-books of surgery. After as complete a follow up as possible of the patients operated in St. Luke's Hospital by various surgeons, he draws the following deductions: 1. The operative treatment of varicocele is frequently followed by hydrocele. Of a total of 303 operations, seventy-six patients were examined, thirty of whom, or 39 per cent., had a hydrocele; forty reported by letter or telephone, and of these seven, 17 per cent., stated that hydrocele had developed. Of the total of 106 patients examined or reporting by letter, thirty-seven, or 35 per cent., had hydrocele. Four, or about 4 per cent., had atrophy of the testicle, and there were two recurrences of the varicocele. 2. Modern text-books on urology and on general surgery fail with one exception to recognize the frequency of this complication. 3. The operation should not be performed except in those cases of very large varicocele giving marked symptoms in a non-neurasthenic patient—certainly not in the type of cases previously referred by the various medical examining boards for admission to the army or navy. 4. If the operation is undertaken, the frequency of hydrocele as a complication should be explained to the patient as a protection to the operating surgeon. 5. In the performance of the operation every care should be taken to avoid trauma to the veins of the cord, and to prevent hematoma or even slight infection, and thus to limit thrombosis and also to avoid the ligation of the spermatic artery as well as the artery of the vas.—*Jour. Amer. Med. Asso.*, March 12, 1921.

AMPUTATION NEUROMAS. THEIR DEVELOPMENT AND PREVENTION.—Huber-Lewis after quite extensive animal experimentation believe that a neuroma indicates an attempt which is thwarted or blocked by scar tissue on the part of the neuraxes of a divided nerve to seek the distal segment and thus complete nerve repair. When blocked the regenerating neuraxes form spirals and end disks, and become irregularly dispersed through the connective tissue of the bulb. The regenerating neuraxes react on the connective tissue elements of the bulb, which as a consequence increase in number and maintain their embryonal characteristics longer than is normally the case. The "swing door," or reversed V, operation and crush and tie operation do not prevent neuroma formation. Any method to be successful must be directed against the neuraxes. Absolute alcohol injected into the nerve some distance (from three-fourths to one inch) above the plane of section is more successful in

preventing neuroma formation than any of the other methods ordinarily employed.—*Archives of Surgery*, July, 1920.

AN OPERATION TO FORM A NEW ANAL SPHINCTER AFTER OPERATIONS ON THE LOWER RECTUM.—Brown describes a plastic operation in which he uses the levator ani to form a new sphincter in removal of carcinoma of the lower rectum by the perineal route. He details two cases in which he performed this operation so successfully that the patient did not suffer any incontinence after ten days.

The author liberates the bowel in the manner described by Quenu; he then outlines the margins of the levator ani and separates a strip one inch wide from either side, one strip is left attached anteriorly and the other posteriorly. The muscle strips are changed from side to side and sutured into place, these forming a new sphincter. The operation is finished by amputating the rectum and suturing the skin edges to its cut surface.

By this operation the lower six inches of the rectum can be removed by the perineal route, a new sphincter which will functionate can be formed and suitable cases relieved with less danger to life than by the combined operation.—*Annals of Surgery*, Dec. 1920.

VASOTOMY: INDICATIONS, TECHNIQUE, POST-OPERATIVE TREATMENT.—R. H. Herbat and A. Thompson in the *Illinois Medical Journal*, 1920 xxxviii, 212, state that in about 75 per cent. of the cases of gonococcal infection of the posterior urethra, the seminal vesicles and prostate become involved. The symptoms of acute inflammation of the vesicles, the prostate and the posterior urethra are similar, whether one or all of these structures are involved. They consist chiefly of a sensation of fullness and pain in the rectum, frequent and imperative desire to urinate and a feeling of inability to empty the bladder. Painful nocturnal emissions suggest vesiculitis, chronic vesiculitis should be suspected in instances of recurrent persistent urethral discharge, especially those following intercourse or nocturnal emissions. Digital examination with a study of the expressed fluid clears the diagnosis. Epididymitis is often caused by partial or complete closure of the ejaculatory ducts which forces the infection down into the vas. Because of the anatomical proximity of the vesicles and the ureters, disturbances often develop in the upper urinary tract due to inflammatory narrowing of the ureter caused by contiguous infection. Hence, in cases of obscure symptoms in the upper urinary tract a careful examination of the vesicles is important. In seminal vesiculitis referred pains are common in the perineum, the inguinal region, the upper border of the sacrum, and the hip from which they sometimes extend down into the thigh. This infection also acts as a primary focus from which distant structures may become involved by metastasis. Latent seminal vesiculitis may be the cause of infection in the patient's wife. These severe disturbances may be prevented by preventing posterior urethritis, but when infection has occurred in the acute form local treatment in the form of hot sitz baths, perineal packs, and hot rectal douches with complete rest is indicated. Drainage should be established later by stripping the vesicles. If the disturbances do not respond to this procedure conscientiously carried out, vasotomy should be done. This operation is applicable especially to the more recent cases and to chronic cases in which there has not been too great a change in the wall of the vesicle resulting in perivesiculitis and perhaps walled

off pockets of infection. The authors emphasize the fact that other urogenital diseases such as stricture, folliculitis and prostatitis may be present and, when practicable, should be cured before vasotomy is attempted. When the vesicle symptoms are urgent, vasotomy should be done first and the conditions treated later.—*Surg., Gyn. and Obs.*, Vol. xxxii, No. 1.

OPHTHALMOLOGY

Conducted by WM. M. HILLEGAS, M.D.

TUBERCULOSIS.—In treating of the diagnosis of chronic intraocular tuberculosis, Stark concludes that the mode of transmission must be through the blood stream, the lodgment of the bacilli occurring most frequently along the veins. While finding of the bacilli is conclusive, the failure to find them is not. The histology of the lesions is sufficient evidence of their nature, but Stark feels the history of the case is never complete without testing the patient with subcutaneous injections of tuberculin.

In the clinical diagnosis the onset of lesions is often quite insidious, but they may follow trauma. He mentions two cases of choroiditis with such a history, and one in which iritis cleared up quickly after extraction of a tooth with an apical abscess; but recurred a month later, and gave a focal reaction to tuberculin. Scleritis is frequently tuberculous, possibly in the majority of cases. The cornea is disposed to become cloudy in tuberculous lesions, and small opaque spots developing without signs of active disease, should suggest it.

He finds the iris more commonly involved than any other part of the eye, if we are to judge by the literature. Vitreous opacities are of various types, arising either from hemorrhage or hyalitis. In the retina involvement is more confined to the vessels, giving rise to hemorrhage and ending in white exudate. Most of his cases of choroidal involvement have had lesions far forward. Papillitis, with several diopters swelling, has followed diagnostic injections of tuberculin.

With reference to such injections, Stark recognizes four classes: Cases with evidence of lung lesions and daily fever should not receive tuberculin. Those with recent lung activity but normal temperature, may be given a dose of 1-500,000 mg., doubled until reaction occurs. Patients without activity of the disease for several years may receive 1-10,000 mg. and have the dose doubled until there is a reaction. Patients who give no history of previous tuberculosis may begin with 5-10 to 1 mg., followed each 48 hours by 2, 3 and 5 mg. Patients improving with small diagnostic doses of tuberculin may be regarded as tuberculous. While a combination of local, focal and general reactions is most positive, it is not essential to a diagnosis, which may rest upon a therapeutic test.—*Ophthal. Literature*, December, 1920.

INJURIES BY LIGHT AND ULTRAVIOLET RAYS.—Two cases of burns of the retina were studied by Klauber. One case occurred in a metal welder. He had no protecting glass for the right eye, and after working about two minutes he saw colors and then a black cloud in the center of his right visual field. There was no reaction in the lids or anterior segment of the eye. The media were clear. In the macular region a vertical light-colored area, one disk diameter in length and slightly narrower horizontally was noticed. Two

small hemorrhages were⁵ noted, one on either side, broadening the swollen area near its middle. A large central scotoma was present. Seven weeks after the injury the vision was 6-10, and the fields had returned to normal. Sub-conjunctival injections of sodium chlorid was the medicinal treatment.

In the second case the burn followed an exposure for a few seconds at a short distance from an electric arc. Greenish yellow spots were noted in the macula, and the temporal side of the disc was pale. The vision remained 6-24 and could not be improved. A scotoma for blue and green at the fixation point was the only abnormal defect in the visual fields. The author contrasts the two cases. In the first only the superficial elements were involved, and no permanent damage was done; while in the second case the deeper elements suffered and the changes were permanent.—*Ophthal. Literature*, December, 1920.

TEAMWORK.—A plea for scientific teamwork in the diagnosis and treatment of diseases of the eye, ear, nose and throat has been made by Cary. He raises the question of whether or not it is wise to have hospitals restricted to the treatment of these particular classes of diseases. Or if it would not be a better plan to have no special hospitals, but merely special departments in general hospitals. The latter method is economical, and the service rendered reaches the highest efficiency in benefit to those who avail themselves of it.—*Southern Med. Journ.*, Vol. 13, p. 62.

RADIUM IN EYE DISEASES.—New and Benedict report their experience with the use of radium in the treatment of diseases of the eye and adnexa. The types of cases treated were as follows: Angioma of the lids; blastomycosis of the lids; vernal catarrh; basal-cell epithelioma of lids and canthus; epithelioma of the limbus; sarcoma of the orbit.

Basal-cell epithelioma of the lids without involvement of the tarsus or bone may be entirely removed by radium treatment. The type of epithelioma and its location should be carefully considered before radium is recommended for lesions around the eyes. If the lesion appears to be active and extending rapidly, in all probability it is squamous-cell epithelioma which has developed on basal-cell epithelioma and does not respond to radium so well as the basal-cell type, and therefore should be removed by excision with the knife, or knife and cautery, and the open wound treated with radium. If the bone is involved, and there is a reasonable chance of eradicating the trouble, the growth and the eye, if necessary, should be removed, the bone thoroughly cauterized with soldering irons, and radium used in the open wound. Temporizing in the treatment of epithelioma, especially epithelioma around the inner canthus, is frequently the cause of failure of cure. Radium eradicates the growth in a very large percentage of cases of basal-cell epithelioma involving the lids, but not the tarsus or bone. The patient should return for observation about every six weeks for several months, so that if the trouble is not entirely eradicated by the first treatment, further treatment may be given. However, a large dose of the radium should be given at the first treatment, since frequently the lesion treated with small doses is only aggravated, and the possibility of clearing up the trouble is diminished.

Melanotic tumors should not be treated with radium, but a radical operation to remove the growth should be done, since this is the only means of eradicating the malignancy. A general anesthetic should be employed, and the excision made very wide of the growth. If a local anesthesia is

used there is always a possibility of traumatizing some of the cells of the tumor. A plastic operation should not be done on the lids for at least six months after the removal of the growth, because it tends to cover up the area in which the recurrence may take place.—*Amer. Jour. of Ophthal.*, Vol. 3, p. 244.

RADIUM IN CATARACT.—Cohen and Levin report the results of radium treatment on cataracts, giving the results obtained in twenty-four cases. In the administration of radium, all the irritating soft rays were filtered off, and only the selectively acting gamma rays were utilized. The actual technic consisted in covering the radium with brass, photographic paper and gauze, and placing it over the closed eyelid. The distance between the radium substance and the eyelid was about 2 cm. The application usually lasted two hours. The authors conclude: (1) the application of radium to the eye is harmless; (2) there is diminution of lenticular opacifications under the influence of radium; (3) should a cataractous lens become matured subsequent to radium treatment, and should then an operation be required, no difficulties will present themselves; (4) it is therefore advisable to submit a sufficiently large number of immature cataracts with useful vision to a proper course of radium treatment, so that a correct estimate of the value of the method may be obtained.—*Jour. A. M. A.*, Vol. 73, p. 1193.

UROLOGY

Conducted by LEON T. ASHCRAFT, M. D.

MANIPULATION IN CALCULUS OF THE URETER.—Andree (*Journal d'Urologie*) finds that catheterization of the ureters in cases of calculus is efficacious without the usual injection of oil, and that even where oil injections are employed it is the dislodgment of the stone by the catheter rather than the oil which causes the stone to come away.

Favorable conditions which provoke the expulsion of the calculus by catheterization of the ureters are small size of the stone and a location far down. But sometimes it is possible to obtain the expulsion of stones the size of a pea or a bean or date stone or stones situated high up.

The catheter may be left in, in case the stone does not come away at once or after several catheterizations.

The author always uses irrigation with silver nitrate in case the catheter passes by the calculus up into the pelvis of the kidney. Silver nitrate not only acts as an antiseptic but also as a stimulant to the ureteral contractions.

GENITAL TUBERCULOSIS IN THE MALE.—J. Dellinger Barney (*American Journal of Surgery*) holds the following conclusions in regard to genital tuberculosis in the male:

1. The epididymis is the primary focus in the genital tract, but—
2. This is always secondary to a focus elsewhere in the body, this focus being situated most often in the lung.
3. The prostate and seminal vesicles are invaded by the disease early and often, but after removal of the epididymis clinical cure is finally established.
4. The second epididymis becomes involved in at least half the cases,

but involvement of this organ may be obviated by early resection of its vas deferens.

5. Orchidectomy is unnecessary if the testicle is free from disease, and even if affected the diseased portion can be successfully removed in many instances.

Primary tuberculosis of the prostate is generally acknowledged to be a rarity, either clinically or post-mortem. A shroud of suspicion clings to the few cases that have been reported. If epididymal tuberculosis, which is not uncommon, is always secondary to a lesion in the prostate it would be reasonable to suppose that early cases with the prostate involved would be encountered in greater abundance.

DIFFERENTIAL DIAGNOSIS OF HEMATURIA.—A. Hyman (*American Journal of Surgery*) holds that a true essential hematuria probably does not exist; it would imply a kidney showing absolutely no minute organic changes. More careful pathological examinations have recently demonstrated that a lesion is present in all cases. So-called essential hematuria used to be considered a manifestation of a chronic nephritis. More recent studies have demonstrated that frequently the bleeding is the result of an acute or chronic infectious process showing but few pathological changes in the cortex, but a marked inflammatory reaction involving the medulla and pyramids. Fibrotic changes take place which eventually interfere with the return venous circulation. This results in venous stasis causing hemorrhage by diapedesis or by actual rupture of the capillaries. Renal hematuria should never be classed as essential or idiopathic unless a most careful exploratory operation with removal of sections from different parts of the kidney (cortex or medulla) has demonstrated the absence of any organic change. Most often the lesion will be found situated in the medulla or on a papilla.

Renal hematurias due to stone, tuberculosis or hydronephrosis are readily differentiated. The main difficulty is found in distinguishing between the so-called essential hematurias and the bleeding due to an early neoplasm of the kidney (that is, in the very early cases).

The finding of albumin and casts in the urine is of considerable diagnostic importance in nephritic hematuria. But the fact should not be overlooked, however, that nephritis may be associated with other organic renal changes, so that the presence of these elements by no means renders the diagnosis certain. It is the exception rather than the rule to find casts in the urine during the attack of active bleeding. The phenolsulphone-phthalein test, urea and blood chemistry, may in the early stages of nephritic hematuria show no marked deviation from the normal.

Whenever feasible the patient should be cystoscoped during the stage of active bleeding; if examined during an interval it may be impossible to determine its origin, whether renal or vesical, unless distinct ureter changes point to one or the other orifice. The possibility of bleeding from both kidneys should also be borne in mind.

In differential diagnosis, a careful history is of importance, laying special stress on any recent infection as a possible predisposing source of the bleeding. The urine should be examined a number of times to determine the presence or absence of casts and tubercle bacilli. A thorough physical examination is a *sine que non*. Next in order come the following: Laboratory and clinical observations, full blood count, blood chemistry, coagulation time, blood

pressure, Wassermann, eye-ground examination, radiography of the urinary tract. If cystoscopy is not possible during the active bleeding it should be deferred until after the X-ray examination. Indigo-carmin tests are often of value for the diseased kidney's function is frequently less than that of the normal one. Cultures from both kidneys should be obtained, followed by the passage of a wax-tipped bougie to exclude the presence of calculus which may not have been demonstrated in the radiogram.

TREATMENT OF REBELLIOUS SUPPURATIVE CYSTITIS BY HOT IRRIGATION.

—A. V. Wendel (*American Journal of Surgery*) states that although most cystitides will clear up after removal of a diseased kidney or calculus, prostatic or urethral obstruction, suppurating seminal vesicle, prostatic calculus or abscess, there are a goodly number of cases of vesical suppuration that refuse to undergo a cure notwithstanding. In short, in these cases the cystitis has become the main pathological entity. Why? Because the three predisposing factors of trauma, congestion and urinary retention or a combination of any or all of them continue in operation.

The most important elements in the treatment of cystitis (purulent) are to keep the bladder continuously clean and to improve the nutrition of the local tissues. The vesical membrane being more or less ulcerated and covered with firmly adherent muco-purulent masses, often incrustations, the futility of irrigations as ordinarily administered, becomes evident. Such bladders are therefore cauterized with silver nitrate, fulgurated and burned with the actual cautery, but very few are cured because such efforts are circumscribed and, after all, the ulcer merely represents one of the consequences of, but not the whole disease.

In such rebellious cases the author advises continuous irrigation of the bladder with hot water. In a case which the author refers to this method was employed day and night for three months.

The method is intended as an extraordinary measure for rebellious cases only; on the other hand, it is neither dangerous nor difficult. It may be used whenever the patient's condition gives the least hope, as the inlet tube can be inserted under local anesthesia through the canula after suprapubic puncture according to the method of Belfield. In most patients the urethra will tolerate a retention catheter so that the wash-water can be carried off in that way. The main points are a continuous flow of sterile water as hot as the patient can comfortably bear under sufficient pressure to thoroughly flush the viscus without over-distention for anywhere from eight to twelve weeks.

CYSTALGIA OR PYELITIS.—Firondini (*Journal d'Urologie*) has often observed a cystalgia all out of proportion to the disease in the bladder itself, due to pyelitis. He could find but little reference to the matter in the literature. It occurs more often in female patients than in males, and is characterized by excessive polyuria which is painful and obstinate. But one often gets the impression that the cystalgia is the consequence of persistent bad treatment, such as irrigation with too concentrated solutions and forced distention which the bladder was unable to bear. Often it is necessary to use some soothing treatment before cystoscopic examination can be resorted to. The cystoscope may show only simple congestion confined to the neck; in other cases the cystoscope shows nothing.

This condition is met with in the early stages of tubercle of the kidney.

Catheterization of the ureters discloses the nature of the trouble. In the urine from the two kidneys are found abundant leucocytes, some blood cells, numerous epithelial cells, desquamated from the upper urinary passages. Casts may also be found as well as renal elements.

The cystalgias appear only, due in great measure to pyelovesicular reflex, and also to secondary cystitis. The treatment is about like that of a simple cystitis; irrigations of silver nitrate, guaiacol oil or other sedatives.

PATHOLOGY

Conducted by JOHN G. WURTZ, M. D.

THE EFFECT ON BLOOD PRESSURE AND THE NON-PROTEIN NITROGEN IN THE BLOOD OF EXCESSIVE FLUID INTAKE.—Jos. L. Miller and J. L. Williams (*Amer. Jour. Med. Sc.*, March, 1921, clxi, No. 3, pp. 327) briefly discuss the observations of others regarding the relationship between fluid intake and urea elimination. Their own observations on three patients given excessive amounts of water, with blood pressure and blood nitrogen estimations, lead to the conclusion that in cases of presumable chronic interstitial nephritis there may be a decided increase in blood pressure caused by a large fluid intake. The occurrence of this does however, depend upon the promptness with which the kidneys excrete water. In the three cases studied large amounts of water taken over a period of six days, was without effect on the blood urea nitrogen. In two cases the flushing apparently lessened the amount of blood uric acid.

THE RELATION OF HYPERTHYROIDISM TO DIABETES MELLITUS.—R. Fitz (*Arch. Inter. Med.*, March, 1921, xxvii., No. 3, pp. 305) gives a review of the observations of many clinicians relative to the appearance of hyperthyroidism and diabetes in the same patient. A relationship between hyperthyroidism and glycosuria (hyperglycemia) has long been recognized, and diabetes has been treated via the thyroid. In some instances the diabetes totally disappeared when the coexisting goiter was removed. The author is of the opinion that when hyperthyroidism and diabetes are found in the same patient it is purely coincidental and that no direct relationship exists. The combination of these two conditions is grave. The diabetes usually follows, but may precede the thyroid disturbance, and when the combination exists, Fitz finds no reason for assuming that partial thyroidectomy alone has any curative effect on the diabetes. His conclusions are drawn from 39 cases studied in the Massachusetts General Hospital and Mayo Clinic.

GIANT CELLS IN CULTURES FROM HUMAN LYMPH NODES.—W. H. Lewis and L. T. Webster (*Jour. Exper. Med.*, March, 1921, xxxiii, No. 3, pp. 349) have made observations upon various cells, particularly the giant cells, migrating from explants of human lymph nodes cultivated in plasma. They give a detailed study of the structure of these cells, which were most abundant in cultures from tuberculous nodes. The authors consider that these giant cells, arise from the large wandering cells, since they are similar in structure; but are uncertain just as to how the giant cells develop. They found no evidence of fusion of these large wandering cells, but did find evidence that would lead to the belief that the cells are formed by division of the nuclei without that of the cytoplasm. The large central area is composed probably of dead material arising in the cell itself or of substances ingested by the cell.

PEDIATRICS

Conducted by C. S. RAUE, M. D.

THE INFANT OF LOW BIRTH WEIGHT; ITS GROWTH AND DEVELOPMENT.—Herman Schwarz and Jerome L. Kohn present a detailed study of this subject. From 2 to 5 per cent. of all viable births result in children of low birth weight. The mortality rate during the first month in this type of case is ten times that of the normal. The lower the birth weight, the greater the mortality.

The mortality rate for the year in this type of case is four and one-half times the normal. In these children of low birth weight the mortality is twice as great in the premature as in the full term.

Twinning in the premature does not markedly affect the mortality rate. In the full term, the single pregnancy has twice the chance for life as compared with the twin pregnancies.

The gain in weight during the first twelve months is at the same rate as that of the normal child, so that the deficiency is not made up at the end of the first year. Twins do not act differently than those from single pregnancies. The growth in length is not made up during the first twelve months. These children seem to attain the normal in length sooner than the normal in weight. It is only before the end of the fourth year that they compare with children of normal birth weight.

The general condition and mentality seem to be that of normal children through infancy and early childhood, although they have a greater tendency to anemia and rickets.—*American Journal of Diseases of Children*, March, 1921.

VON PIRQUET REACTION.—Gittings' and Donnelly's series demonstrate again the high percentage of tuberculous infection and the comparatively low incidence of recognizable clinical tuberculosis in childhood. Additional evidence is adduced to prove that a positive tuberculin reaction does not occur in the absence of tuberculous infection. There should be at least one repetition of the tuberculin test (von Pirquet), if the first proves to be negative.—*Archives of Pediatrics*, February, 1921.

VACCINE IN PROPHYLAXIS AND TREATMENT OF WHOOPING COUGH.—L. Spolverini cites (*Policlinico, Rome, September 20, 1920*) 408 cases of whooping cough reported by 8 different clinicians in which vaccine treatment was tried with excellent results in a large proportion, but adds a record of over 100 cases reported by 7 others in which no benefit was apparent. He described the technic for the vaccine he has been using in 98 children with purposes. He refers further to 119 other children treated by 3 other clinicians with the same vaccine. When it was injected during the first ten days, during the catarrhal stage of the disease, marked improvement was the rule, the spasms becoming attenuated and disappearing. In a few instances brilliant results were obtained also at an advanced stage, but in the majority of cases, after transient improvement, the symptoms returned as pronounced as before. His experience suggests that the Bordet-Gengou bacillus starts the disease and opens the portals to other bacteria, but the latter by the end of the third week crowd out the former, and hence a Bordet-Gengou vaccine is useless after that date.—*Journal A. M. A.*

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THE TREATMENT OF DISEASE BEFORE IT IS DIAGNOSED.

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DURING man's historic period the treatment of disease has occupied the close attention and received the most serious consideration of quite a large percentage of the inhabitants of the earth, and there is accessible and reliable evidence that even during prehistoric times mankind found it necessary to care for diseased comrades and relatives. During what is called the historic era, which after all does not cover a very long period of time, some of the most intelligent minds, the ripest scholars, the cleverest intellects, the best educated of humanity have devoted all their mental powers, all their ingenuity, the very best of their lives to solving the many questions which are inseparably connected with disease and its treatment.

At the present time (A. D. 1920) before one is considered qualified to treat sick people he must have had an education in accordance with certain academically and legally accepted standards. In our country the education called for must cover all preparatory work, including two college pre-medical years during which certain studies are positively required; then four years in medical school following a very varied and comprehensive curriculum; and finally one year of

practical training in hospital. By this time one has reached the age of at least twenty-four or twenty-five years, but even so he is not permitted to practice his profession until he has successfully passed examinations before a licensing board. Having fulfilled all sorts of academic and legal requirements, having complied with the high standards set for the medical profession, surely one is (or ought to be) equipped to practice medicine: that is, to treat diseases whether or not they have been diagnosed. But is he? He is as far as technical training can qualify him, but his knowledge is chiefly theoretical in nature and has to be tried out and crystallized in the crucible of experience. Much of the teachings of the schools is merely tradition, and the student is taught to *do* things that others have done, and to *do* them in the same way. Later in life he may learn to rely on his own judgment, matured in the school of life. But even after years of experience are we any of us satisfied with our pharmaco-therapeutics? Are we confident when we have prescribed a drug that we are going to see definitive curative results? Have we the assurance that the physicist or chemist has that certain things will surely happen when certain other things have been done?

The chemist can foretell with mathematical accuracy just what will happen when measured quantities of known salts are brought together in solution. The physicist knows positively how much power is needed to overcome a definite resistance. The astronomer is able to prophesy concerning the appearance of a hitherto unknown star or comet in a given locality in the heavens at a very definite time. But these scientists are dealing with inanimate materials and forces and not with life itself, and it is right here that the physician is handicapped.

The physician, a mere finite being, a created thing, is dealing in his daily work with unknown, immeasurable forces of which he knows practically nothing, and of which he himself is the chief product. He is coming into contact with, and setting up his knowledge and judgment against the Infinite and Unknowable. Life as it is exhibited among human beings is different from chemical and physical activities; it goes far beyond these into realms yet to be explored. It is true that many of the functions of the body are simply chemical reactions—digestion of food, for instance; and many of the chemical activities of the tissues and organs can be duplicated

in the laboratory. The structure of the eye, the ear, the bones, etc., are excellent illustrations of physical principles. And in so far as the physician is acquainted with chemistry and physics, in so far he is helped—and materially helped—to understand the human mechanism and its functions, in health and in disease. But once more the physician in his daily practice is dealing with the manifestations of life—a force or combination of forces much more complex than the forces met with in the ordinary laboratory.

It is, therefore, not a simple thing to treat diseases, disturbances of the life forces; to restore health to those who have been deprived of it.

I wish right here to emphasize the difference between "treatment" and "cure." The term "treatment" as ordinarily used includes all the hygienic, sanitary, dietetic, psychic and other measures utilized in our efforts to restore a sick person to health. The physician prescribes a treatment, that may be simple or complicated. He does not "cure" his patient, he simply "treats" him. The "cure" or the restoration to health, is brought about by the power, or energy, or force, that we call life—that Hahnemann called "that spirit-like vital force."

The word "cure" is used frequently without due appreciation of its significance. In the original Latin, "curo" meant simply "to take care of" or "treatment," and in that sense it is occasionally used today, as in "water cure," "grape cure," "rest cure," etc. But it has come to mean "to restore to health," "to make well," the process itself being a manifestation of the reaction of the organism against some disturbing influence, the result being the removal of disease; and disease removed is health restored.

The great object of the physician's life-work then is to restore sick people to health; to assist nature in bringing about a "cure."

From time immemorial drugs have been used for this purpose, and even today are relied upon to initiate and conclude the process.

Our knowledge of drugs does not go far back into antiquity. It is claimed that Theophrastus (B. C. 370-286) the father of botany, the friend, pupil and successor of Aristotle, described some 500 different plants and plant principles. He did for the vegetable kingdom what Hippocrates did for surgery and clinical medicine, in that he collated the loose plant-

lore of his predecessors into a systematic treatise. Through medicine he entered the vast field of botany.

It is also claimed that Dioscorides (B. C. 54) among other important things described not only the plants but the drugs obtained from them and included in his *materia medica* something like 600 drugs. The "father of *materia medica*" is the title by which he is known, and his writings are the source of the *materia medica* of antiquity. He was the first "to write on medical botany as an applied science," and his descriptions were followed word by word for sixteen centuries—up to the beginning of the seventeenth century his work was quoted.

Knowledge of drug action has been very slowly developed, and that "knowledge" is, to a great extent, a matter of "tradition." It is illuminating and interesting to glance at the history of what is called "*Materia Medica*" and notice how, throughout the ages, certain drugs have been credited with the power of healing certain conditions—and to notice also that the present-day reputation of a large number of drugs is practically just the same as it was in the dawn of history. Let me quote a paragraph from Garrison's well-known "*History of Medicine*" (pp. 21-22):

"We find that savages in different countries know instinctively the most fatal arrow-poisons—curare, ouabain, veratrin, boundou; as well as the virtues of drugs like opium, hashish, hemp, coca, cinchona, eucalyptus, sarsaparilla, acacia, koussou, copaiba, guaiac, jalap, podophyllin, or quassia. Not to go further than our own country, we find the North American Indians aware that arbutus is 'good' for rheumatism; lobelia for coughs and colds; wild sage tea, golden-seal, flowering dogwood, and prickly-ash berries for fevers; elder, wild cherry, and sumac for colds and quinsies; wild ginger, ginseng, and euphorbia for digestive disorders; inhalations of pennyroyal for headaches; sassafras or violet leaves for wounds and felons; the roots of sassafras and sarsaparilla for 'cooling and purifying the blood.'

"The plant-lore of rural England included a knowledge of the virtues of camomile, sage, and dandelion teas as laxatives; of marjoram and primrose root for headaches; of wormwood as a tonic; of valerian for the nerves; of agrimony and parsley for jaundice; of meadow-saffron (*colchicum*) for gout; of fennel, eye-bright (*euphrasy*), and rue for bad eye-sight;

of male fern and peach-leaves for worms; of tansy as a vermifuge and abortifacient; of horehound, marshmallow or candied elecampane for coughs and colds, of foxglove as 'the opium of the heart,' and of such 'vulnerary plants' as bryony, agrimony, hare's ears, moonwort, alehoof, and goldenrod. English poetry and folk-lore are full of references to thyme and marjoram, rosemary and rue mistletoe and ash, as well as poisons like hemlock, leopard's bane (aconite), the deadly nightshade (belladonna), 'The juice of cursed hebenon' (yew), and henbane (hyocyamus), which Aretæus regarded as a cause of insanity and to which Shakespeare refers in the same spirit as

.....the insane root
That takes the reason prisoner."

The same sort of knowledge (if the use of the word may here be permitted) concerning drugs can be found to have existed in Egypt 1600 B. C., and at later dates in India, China and Japan. In short, the historic study of drugs and pharmacotherapy would seem to show that mankind has learned very little to boast of in more than 3,000 years.

One reason for this lack of progress, this deplorable stagnation, is that until the days of Hahnemann a rational and scientific method of studying drug action was not employed, and it is a matter to be regretted that Hahnemann's followers have not been able to "carry on," improve upon, and perfect the work he so well began. There are three essays by Hahnemann which are very rarely consulted, which are not even known to exist by the majority of the medical profession, but which, nevertheless, contain nuggets of wisdom and "common sense," more precious than nuggets of gold. These essays on "A New Principle for Ascertaining the Curative Power of Drugs, with a Few Glances at Those Hitherto Employed," (1796); "Aesculapius in the Balance" (1805), and "The Medicine of Experience" (1805), deserve a careful annual reading, for they contain gems of erudition, and give evidences of a well-balanced mind, sound judgment, and the possession of the spirit of the real investigator.

Methods now utilized in ordinary scientific research, if applied in the Hahnemannian spirit to the study of drug pathogenesis, would give us the one thing absolutely needed upon which to base a curative pharmacotherapeutics. Unfortunately today, after the past centuries of ill-health and suffer-

ing which has been the common lot of humanity, and the vain attempts to counteract this ceaseless tide of sickness by the use of drugs, our real knowledge of drug therapy is meagre. It may be considered a maxim that *no art progresses far without its proper science*. The only science upon which the art of pharmaco-therapeutics can be based is the science of *Drug Pathogenesis*. Therefore, the unsatisfactory condition of pharmaco-therapy is probably due to the relatively undeveloped science of drug pathogenesis.

It was Hahnemann who pointed out with undeniable accuracy that drugs make healthy people sick. To quote from his essay on "The Medicine of Experience" (p. 451, Lesser Writings): "Those substances, however, which we term *medicines* are of a completely opposite nature (to foods). They afford no nourishment. They are abnormal irritants, only fitted for altering our healthy body, disturbing the vitality and the functions of the organs, and exciting disagreeable sensations; in one word, making the healthy ill.

"There is no medicinal substance whatsoever that does not possess this tendency, and no substance is medicinal which does not possess it.

"It is only by this property of producing in the healthy body a series of specific morbid symptoms, that medicines can cure diseases, that is to say, remove and extinguish the morbid irritation by a suitable counter-irritation.

"Every medicinal substance causes a peculiar specific disease: a series of determinate symptoms, which is not produced precisely in the same way by any other medicine in the world."

In connection with this idea we read in the "Organon" (sec. 21): ". . . it follows that, *if drugs act as curative remedies, they exercise this curative power only by virtue of their faculty of altering bodily feelings through the production of peculiar symptoms* . . ." Therefore, if drugs can cure or help to cure sick people it is because they are capable of making well people sick.

Now a word as to disease: "*Diseases are definable only as aberrations from the state of health*" (sec. 19 of the "Organon"). Disease then is abnormal. Health is normal. Birth is normal. Even death of the body is a normal, an orderly and a necessary event; but death as the result of a disease, or death during the early periods of life is an abnormal thing. A very

gifted and unusually wise man (Emanuel Swëdenborg) wrote:

"If man had lived a life of good, his interiors would be open to heaven, and through heaven to the Lord; and so, too, would the very least and invisible little vessels. In consequence man would be without disease, and would only decline to extreme old age, even until he became a child again, but a wise child; and when the body could no longer minister to his internal man or spirit, he would pass without disease out of his earthly body into a body such as angels have, thus out of the world directly into heaven."—(Arcana Coelestia, 5726.)

Probably none present will contest the claim that diseases may be grouped into three classes:

I. The acute diseases that tend in the majority of cases to spontaneous recovery.

II. The chronic diseases that tend inevitably to dissolution.

III. The chronic diseases that tend neither to dissolution nor to recovery, but continue indefinitely.

Despite classification and even despite diagnosis, it is well known that no two cases of disease are alike except in their grosser manifestations. We are all men and women, but no two of us are alike. We are all Americans, but we are very different in our opinions on many subjects. The individuality of the person, the essential characteristics are quite as manifest in disease as they are in health. Hence the doctrine of "Individualization" in homœopathic therapeutics.

These individualities interfere somewhat with diagnosis but most seriously, of course, in those cases that do not present the more evident objective symptoms of the average acute disease.

Diagnosis may be *easy*; there are many cases where it is practically impossible to go astray.

Diagnosis may be *difficult*, but after patient investigation may be possible.

Diagnosis may be *impossible* as organic changes may not be recognized after the closest scrutiny.

Diagnosis may be *incorrect*, although the error may not be recognized until during, or after, an operation or post-mortem examination.

As is so clearly stated by Musser: "Notwithstanding our efforts to collect data by inquiry and by observation, we are often unable to make a diagnosis. This arises when premises

are wanting for the process of induction. The subjective symptoms may not tally with the known processes of disease, or the narrator of the history of the present disease may omit important evidence from lack of memory or knowledge, from design, or from other reasons. The objective phenomena may be developed in an ill-defined way, or they may be obscure, as the state of the abdominal contents in a person who is obese, or they may point to one or more processes, the subjective symptoms of which are not present. At the time of observation the disease may not have fully developed, may not have 'spelled itself out.' Under these circumstances a provisional diagnosis must be made, or conclusions held in abeyance."

It is well known that people when they are sick want to get well and call to their aid a physician who is expected to *do* something that will accelerate their recovery. They are not, as a rule, vitally interested in the question of diagnosis; they want to get well.

With the wealth of knowledge, of tradition and of accumulated professional experience available, the physician ought to be a real help to his patient. But is he, by means of drugs alone, able to accomplish much in the way of accelerating a cure? Answers to this question will vary much according to the temperament of the physician. Until within a century the history of pharmaco-therapeutics, one may say the history of medicine in general, does not shine with brilliant accomplishments in the way of positive cures.

Right here, by way of illustration, I am tempted to make a quotation from Hahnemann's "Aesculapius in the Balance": "The majority of cases, for the treatment of which a physician is called in, are of acute diseases, that is, aberrations from health, which have only a short course to run before they terminate either in recovery or death." (Lesser Writings, p. 411.): "In epidemic dysentery just as many of those who follow the indications afforded by nature, without taking any medicine at all, recover, as of those who are treated according to the method of Brown, of Stahl, of C. L. Hoffman, of Richter, of Vogler or by any other system. Many die, too, both of those treated by all these methods, and of those who took no medicine; on an average just as many of the one as of the other. And yet all the physicians and quacks who attended

those who recovered, boasted of having effected a cure by their skill.

"What is the inference? Certainly not that they were all right in their mode of treatment; but perhaps, that they were all equally wrong. What presumption for each to claim, as he did, the credit of curing a disease, which in the milder cases uniformly recovered of itself, if gross errors in diet were not committed!

"It were easy to run through a catalogue of similar acute diseases, and show that the restoration of persons who in the same disease were treated on wholly opposite principles could not be called a cure, but a spontaneous recovery.

"Until you can say, during the prevalence of an epidemic dysentery for example: 'Fix upon those patients whom you and other experienced persons consider to be most dangerously ill, and these I will cure, and cure rapidly and without bad consequences.' Until you can say this, and can do it, you ought not to vaunt that you can cure the dysentery. Your cures are nothing but spontaneous recovery."

The essential point in the art of healing is this (even at the risk of repetition): Arts to be progressive and successful must be based upon science or knowledge. As a result of accumulated knowledge and experience certain so-called "laws" are formulated, and these furnish the guiding principles or rules of action. Until the appearance of homœopathy the art of healing, which up to that time was chiefly the art of drug administration, had no laws or guiding rules except that of "contraria contrariis," which has a limited field of application.

In the sciences, chemistry, physics (electricity, for instance), biology, astronomy, etc., experience has led up to the formulation of many so-called "laws," simply to enumerate which would take more time than we can give. Why should not medicine, with its numerous sciences, old and new, have formulated at least one "law" or guiding rule? The need for such a law is widely recognized. The absence of such a law has been as a mill-stone around the neck of pharmaco-therapeutical progress. One such "law" (to use the word guardedly) was actually discovered in 1790 by Samuel Hahnemann, "*Similia Similibus Curantur*" (likes are cured by likes), although as a working rule "*similia similibus curentur*" (let likes be treated by likes) it was not fully announced till 1810,

after twenty years of the most careful study and analysis of experience.

It is not intended here to trace the progress of homœopathy, discuss its merits or predict its future. One question, however, to which many answers have been given, has for a century been a "thorn in the flesh" of homœopathy—and that is: How explain the *modus operandi* of the homœopathically administered drug? Hahnemann claimed that an explanation was unnecessary, and then he proceeded in paragraph 29 and elsewhere in the "Organon" to offer an explanation which his followers have been unable to accept, viz.: The theory of "substitution." Had he instead used the idea of "*reinforcing* the vital power" of the body, which is found in note 13 to paragraph 29 of the "Organon" he would have been more in accord with, and even anticipated, modern ideas on the subject.

It is encouraging and particularly interesting that a so-called "law" has been invoked to explain the action of the small dose administered in accordance with the rule of "similia." And it is more than encouraging to find this "law" referred to in two recently published books by well-known and highly esteemed homœopathic physicians. I refer to "An Introduction to the Principles and Practice of Homœopathy," by Charles T. Wheeler, M.D., B. S., B. Sc. (London), of London, and "Medical Therapeutics for Daily Reference," edited by R. F. Rabe, M.D. (Dean of the New York Homœopathic Medical College) under the authorization of the American Institute of Homœopathy.

And let me say right here that homœopathic practitioners, by not possessing and absolutely familiarizing themselves with these two, not large books, are not only doing an injustice to themselves, but a greater injustice to their patients and to homœopathy.

The "law" which it gives me pleasure to call to your attention is known as "Arndt's Law," and is referred to by Dr. Rabe as follows:

"One of the fundamental principles of protoplasm is its ability to react to stimuli, whether thermal, electrical or chemical. 'Weak stimuli kindle life activity, medium stimuli promote, strong impede it and the strongest stop it.' This law, laid down by Arndt as one of the fundamental biological laws, is a complete and direct corroboration of the postulate of the homœopathist, that in dealing with drugs acting

upon the cellular activities, it is essential for therapeutic purposes that we should avoid excessive stimulation."

Dr. Wheeler in his admirable and logical and convincing discussion of "The Principles of Homœopathy," on p. 9, when speaking of the reactions of protoplasm in response to stimuli, has this to say: "Now these responses of protoplasm have been well investigated, and appear to follow a constant rule generally summarized as Arndt's Law. The simple statement of this rule is that small stimuli encourage life activity, medium to strong stimuli tend to impede it, and very strong stimuli to stop or destroy it. Thus strong solutions of arsenious acid will destroy the yeast cell, less strong impede its fermentative activity, but very dilute solutions will encourage its activity, at any rate for a time."

One more thought before concluding: There are three principles in accordance with which drugs may be administered to sick people:

One, a most natural but not, therefore, the most rational principle is that of "*contraria contrariis*," advocated by Galen and followed very universally up to the present time. This method, the "Antipathic" is simply palliative. It does not and cannot directly cure, and often it may interfere with curative reactions. It is popular, easy, of rather limited application, and has often paved the way to the formation of destructive drug habits. This does not mean that palliation should never be resorted to, but the method should be used sparingly, intentionally and intelligently.

Another principle is the *heteropathic*, which is essentially empirical in its nature: and by attacking theories and diagnoses has so insecure a foundation that it is naturally ever changing. After centuries of use the heteropathic principle has succeeded in discovering a very few so-called "specifics," and since drugs in the dosage ordinarily employed are distinctly pathogenic (sick making) the heteropathic principle simply adds a burden to the burden of disease nature already is carrying, and the curative reaction, therefore, must be impeded.

The remaining principle is the *homœopathic* which is curative in essence, curative in principle, and, unless experience is deceiving, curative in fact. This "curative therapy" is the dominant tone in the preface to Dr. Rabe's book previously referred to.

As far then as drug therapy is concerned, there is only one

reasonable way to treat sick people with any idea or hope of curing: *i. e.*, of restoring them to health, or of helping nature in her efforts to cure.

We must always recollect that the stream of life is ever towards health—the normal, and we must be careful not to interfere with nature's processes.

As far as drug therapy is concerned, with the so-called "law" of similars, and "Arndt's Law" to guide us, the diagnosis is not essential. Naturally, however, a correct diagnosis must be made at the earliest possible moment, for oftentimes that diagnosis will show at a glance that drugs will be of little service, and surgery or some other treatment will have to be solicited. At the same time we must bear in mind that a diagnosis may be incorrect, and it may be misleading as to treatment.

In cases where for any cause diagnosis is delayed there is the one *curative* therapy to make use of, and one only, and that is indicated by the rule "*similia similibus curentur*."

I should be glad to leave with you these thoughts:

I. The art of diagnosis is farther advanced than the art of pharmaco-therapy because the former is founded upon the sciences, anatomy, physiology, bacteriology, pathology, chemistry and physics, while the latter, though one of the *oldest of all arts* and much older than diagnosis, has made insignificant progress because the one science on which it must be founded is only in the beginning of its development.

II. Diagnosis may be at times easy, at times difficult and at times impossible.

III. The treatment of *sick people* is the aim of the physician, and not the treatment of a diagnosis.

IV. Acute diseases naturally tend to recovery, but in spite of Hahnemann's conviction that drug treatment in such cases is not necessary the consensus of opinion is that the suitable remedy in a small (*i. e.*, gently stimulating) dose is of some, if only slight, value. The psychic effect on the majority of sick people is beneficial, certainly not harmful.

V. Chronic diseases offer the great field for pharmaco-therapy for in such cases nature's feeble reactions demand reinforcement.

VI. After centuries of experience pharmaco-therapy is slowly reaching a scientific foundation in drug pathogenesis.

and in the formulation of "laws" and guiding rules—the rule of symptom-similarity, and "Arndt's Law."

VII. And finally, Hahnemann's teachings have emphasized the fact that drugs in appreciable doses are essentially pathogenic in action, and this action gives us indications for the use of drugs on a curative basis—whether or not a diagnosis has been made.

NITROUS-OXIDE AS AN ANESTHETIC AGENT.

BY

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It is surely the work of fate that the first drug of the post-mythological era to produce sleep by inhalation should be even now only in its ascendancy. It is written in the "Good Book" that "the first shall be last and the last first." This is the day of the fulfillment of this prophecy.

Nitrous-oxide has been neglected while ether and chloroform were being exploited. Since 1843, when it was first used by a dentist for dental work, it has found its best exponents among the dental profession. It was never used successfully as an anesthetic for major surgery until oxygen was added, which recent investigation of its physiological action has proven to be the correct procedure. Let us consider very briefly the chemistry and the physiology of this gas.

Nitrous-oxide is a colorless, odorless, stable gas at ordinary pressure. It can be kept indefinitely in its containers. While it will support combustion, it is non-combustible.

Nitrous-oxide produces anesthesia and analgesia by being absorbed by the red-blood corpuscles and carried to the tissue cells. The tissues have a very low affinity for this gas, so they are readily induced to give it up on cessation of its application. Coincident with the administration of this gas there is an oxygen limitation and resulting anoxemia. Thus is produced a temporary suspension of the functions of the various cells, the cells of the higher and more specialized centers first

and the respiratory and circulatory centers last. It was formerly supposed that nitrous-oxide raised the blood pressure. However, from the work of McKesson, over a period of some years, it has been shown that the blood-pressure is not raised above that which is normal for the patient more than would be done by straining at stool. Furthermore, the fall of the blood-pressure after operation is not so marked or so lasting as under ether. It also has been found by experiment that the coagulation time of the blood is decreased under this gas and that the tone of capillaries is maintained, hence we have two factors to lessen bleeding under this form of anesthesia.

Contrary to the findings with ether and chloroform no tissue changes are produced except the change of oxy-haemoglobin to reduced haemoglobin, due to the de-oxidation. This ceases immediately on the addition of the oxygen in sufficient amounts. These findings have been proven for anesthetics lasting some hours.

Nitrous-oxide is a general anesthetic and as such all degrees of anesthesia can be obtained, including the much discussed abdominal relaxation. We must keep in mind, however, that there are cases in which relaxation of the abdominal wall cannot be obtained with any anesthetic short of the lethal dose. This, then, leads to a consideration of its administration.

The administration involves the use of a highly exact apparatus in perfect working order, by which every particle of air can be excluded from the patient, and by which the exact dosage of the gases can be administered. These facts cannot be too strongly emphasized, for on this depends in a large measure the success or failure of the anesthesia. The only departure from the complete air exclusion is in the use of a semi-closed mask devised by Gwathmey with which it is intended to give nitrous-oxide and anesthol, or with the intra-pharyngeal administration. The semi-open mask has been recommended for cases in which ether is contra-indicated and in which it is believed that rebreathing is undesirable, or merely as a preliminary to an open or semi-open ether sequence.

We shall now speak briefly of the usual form of nitrous-oxide oxygen anesthesia. The induction is begun with 100 per cent. nitrous-oxide until the blood stream is thoroughly saturated with the gas, as shown by the first signs of oxygen hunger, namely, change in character or rate of respiration ac-

accompanied by a little snort, a twitch of the eyelids, or jerking of the hand and foot, or possibly cyanosis. Then sufficient oxygen must be added to prevent the further development of anoxemia. The amount of oxygen is variable but usually 5 to 6 per cent. is added, but increased or decreased to obtain the normal plane of anesthesia. Now in some cases relaxation is satisfactory at this stage, but usually it is not. This is known as primary saturation. Now, however, only the actively circulating blood is saturated, while in the tissues there still remain considerable volumes of gases which enter the blood stream during the induction, diluting the nitrous-oxide and preventing deeper anesthesia.

' If you have an apparatus with which you can positively inflate the lungs with pure oxygen, you can proceed to secondary saturation. If you have not, and with most apparatus you have not, ether or anesthol must be added. If secondary saturation is desired, the patient is again administered 100 per cent. nitrous-oxide until the pupils dilate, tonic muscular spasm or rigidity develops, or respiration becomes slow or stops. Then administer one or two breaths of 75 to 100 per cent. oxygen, or if he does not breathe inflate the lungs with pure oxygen once or twice. The cyanosis will begin to lighten, the pupils to retract, the pulse is slower than before or normal and the muscles are perfectly relaxed, and presently respirations resume. If too much oxygen is not administered the period of relaxation may last through the operation (for this technique of secondary saturation we are indebted to Dr. E. I. McKesson, of Toledo). It may be necessary during the operation, especially on closing the peritoneum, to resaturate the patient as before because it is believed that air is absorbed through the skin and open abdominal wound, thus diluting the nitrous-oxide.

In order to properly accomplish the above it is necessary to thoroughly understand the signs of nitrous-oxide anesthesia. This can best be done by reference to Dr. McKesson's nitrous-oxide-oxygen sign chart of third stage anesthesia. In this he divides the third stage into three planes, light, normal and profound. The profound plane borders upon and merges into the fourth stage.

We shall not refer in detail to any of the signs, except cyanosis which will bear some emphasis.

It has been taught that this was the sign of deep anes-

thetia, and we have all looked upon it as dangerous. Well we might, too, with ether and chloroform anesthesia, but not so much so with nitrous-oxide for here we have it under absolute control.

McKesson classifies cyanosis as primary and secondary. The primary, due to changes in the blood itself, and the secondary, due to local or external causes capable of increasing the oxygen depletion of the blood. The cyanosis is due to de-oxidation and the change of oxyhaemoglobin to reduced haemoglobin; it is a physiological process carried beyond the usual limits.

In the normal individual the blood leaves the lungs 5 per cent. unsaturated, so if aeration is interfered with the unsaturation is increased, as in obstructed airway or in nitrous-oxide anesthesia.

The robust individuals with their active metabolism stand less unsaturation than the aged in whom the metabolic process is slow, and who are accustomed to greater unsaturation. Hence the former will be readily cyanosed by nitrous-oxide administration while the latter more slowly. Likewise in anaemia, cyanosis is hard to produce with a haemoglobin of 50 per cent. and with 30 per cent. or less it can not be produced short of death. Hence it is possible to overdose a patient and still have them pink or have them cyanotic and yet only slightly anesthetized. Thus it will be seen that something more than the observation of cyanosis is necessary in the administration of nitrous-oxide.

In what cases then is the use of this drug permissible? Crile has said that there are no contraindications. Other men have said that it can be used in any case which can take an anesthetic by inhalation. From our own experience we have found that septic cases do well under this gas particularly the empyemas, the aged also, especially the prostatics and the like, where a marked fall in blood pressure may mean a permanent cessation of kidney function; in cystoscopies; in divulsion of the sphincter ani. McKesson and others are using it for tonsil and adenoid work and in exophthalmic goiter. Wherever the cautery is to be used it is the anesthetic of choice. For abdominal surgery it is being used by a number of men, by some to the exclusion of all other anesthetics, and with very satisfactory results for surgeon, patient and anesthetist.

There is another field which we have not mentioned and

that is for analgesia in obstetrics. Davis investigated its effect on pregnant guinea pigs with administrations lasting about six hours and found no effect on mother or foetus. The speed with which the effects are obtained, the flexibility, the absolute control which the anesthetist has, its lack of post-partum effect on kidneys and liver particularly recommend it. If deeper anesthesia is desired it is readily obtainable by increasing the saturation. Then the child can be oxygenated after delivery of the head before the separation of the placenta. It does not diminish the uterine contractions, but rather increases them by relieving the patient of pain while still conscious and permitting her to properly bear down.

While speaking of analgesia, let us not forget its use in the opening of abscess, etc., intrauterine introduction of radium, paracentesis of the ear drum and many such operations. These are the cases for which light chloroform anesthesia has long been recommended, and this is the stage of chloroform in which the most deaths have occurred during such operations. Nitrous-oxide has the lowest mortality rate by far, even though it has its dangers. But when the immense numbers of daily administrations by dentists to all kinds of patients are taken into account, it certainly must be classed as one of our safer anesthetics. Chloroform has next to the highest mortality rate, and there are probably many deaths not reported. Why then subject your patient to this danger? Why subject these cases to the unpleasantness of an ether anesthesia, when a pleasant safe one is at hand?

Now to consider the unfavorable side. There is one objection which may find its use in major surgery, namely, the preliminary hypnotic. This consists of either morphia and atropine or morphia and scopolamine, or pantopon and scopolamine.

These drugs quiet the patient, remove apprehension and obviate the danger of psychic shock, without doing the patient any harm. In cases of profound shock, no preliminary hypnotic is necessary, and, of course, in children under ten years. Some ether users object to the preliminary hypnotic because it involves the use of a multiplicity of drugs. In reply to this let us say that ether itself is a combination of several drugs.

There is one other objection which we shall mention only to condemn those who advance it, and that is, the cost of administration.

In conclusion let us state that we are just beginning to understand the possibilities of this gas, that the day will come when it will be used in hospitals more frequently than ether, because it will be as cheap as ether, far safer, easier to administer, and most important of all, will do the least damage to the patient, beside being the most pleasant one to take.

A CASE OF HEMATEMESIS.

BY

ELWOOD S. SNYDER, M.D., LANCASTER, PA.

(Read before the Homœopathic Medical Society of the State of Pennsylvania, September 21, 1920.)

ON February 28, 1915, Mr. F. D., 48 years of age, sent for me to see him at his home. Upon my arrival, I found he had a copious hemorrhage, with the following history:

During the night, or early morning, he had vomited about a pint of blood, after which he seemed to feel better and did not send for me until a second attack just before noon of the same day. According to his account, he had never been sick until within the past month, when he began with a weighty pain in the epigastrium, which I found upon questioning him, was not relieved by food, nor by pressure. A few times during this time, he had vomited a dark brownish fluid, but no blood. He said he felt that he was gradually losing weight during this time, and also growing weaker, and the hemorrhage he now had, made him very weak.

My physical examination of him showed good nutrition, heart approximately normal, apex in the fifth intercostal space, and just inside the nipple line, no presystolic thrill, no murmur, pulmonic second sound no greater apparently than the aortic second. The abdomen was somewhat rigid, but showed no masses, although some slight tenderness over the region of the pyloric end of the stomach. Beyond this, the visceral examination apparently normal.

I prescribed ipecac in alteration with china, hour about. His vomiting ceased and he soon felt stronger. Reported to me a few days later at my office. I observed he was becoming more anemic and losing weight, too. I advised his going to

the hospital for more scientific investigation. Here we found the urine negative, blood showed red cells about 2,000,000, white about 11,900. Hemoglobin about 60 per cent. The blood smear showed marked achromia, considerable deformities, no blasts, differential count negative.

Now, according to accepted authorities, there are but two common causes of hematemesis, by which we mean the vomiting of pure blood in considerable quantity—that is, an ounce or more. These causes are peptic ulcer and cirrhosis of the liver.

If an alcoholic vomits blood, it is often impossible to decide whether the hematemesis is due to cirrhosis or to congestion of the stomach itself. However, this of itself is not important, as at the end of any period of violent vomiting and retching, however produced, a small amount of blood may be ejected without organic disease as the cause.

Gastric cancer is rarely associated with vomiting of pure blood in large amounts, as the ulcerated surface of cancer oozes continually, and the blood thus discharged is digested into a material resembling coffee grounds. This may be thrown off when the patient vomits. It must be remembered that a vomiting of such a brownish fluid is indistinguishable from that of gastric ulcer as sometimes found after surgical operations, or in a general or local peritonitis, and is not at all peculiar to these conditions.

Therefore, the diagnosis of the causes of hematemesis largely depends upon a good history of the case. Digestive symptoms of the type characteristic of ulcer are usually distinguishable without much difficulty from those secondary to cirrhosis of the liver. In ulcer, the physical examination is usually negative. In cirrhosis, we may be able to make out changes in the liver or portalstasis. I might say, that in splenic anemia, the spleen is usually so much enlarged that any one who knows enough to feel for it will recognize it.

Now, when a man of that age, that is, forty-eight years, vomits blood without any previous gastric symptoms, cirrhosis of the liver is the most probable cause. In this case, there had been gastric symptoms, although in a mild degree, for at least a month previous to my being called. There was no alcoholic history, no splenic enlargement, no previous anemia, the amount of blood vomited large and the anemia great. Now with this picture, peptic ulcer of the stomach, or duodenum, is

the most probable diagnosis, although the physical examination may show little. Gastric cancer may cause a similar hemorrhage, but this is rarely so. The X-ray proved negative, excepting a questionable shadow. I, therefore, concluded that I had a case of peptic ulcer and treated it as such. My patient recovered and has been apparently well ever since. You will note I treated this patient during the year of 1915.

The remedy was nitrate of silver 1/50 gr. doses, a carefully regulated diet, avoiding carbohydrates where there is much bacteriological fermentation, small meals and non-irritating, also restricting all condiments from the diet.

WHY LET CHILDREN DIE?

BY

MARGARET F. HASSLER, M.D., READING, PA.

(Read before the Homœopathic Medical Society of Pennsylvania, Sept. 18, 1920.)

It has been said no program of a medical convention is complete today without at least one paper on the importance of preventing infant mortality. This is probably true, but before what section should it be presented in order to have the most effect? Does the problem of baby-saving belong to pediatricist alone, when statistics show that the majority of babies die before they are one month old; or due to the obstetrician alone, when out of three-fourths stillbirths in the United States, one-third are due to syphilis which probably existed in parent before conception?

No one class of physicians can cope with this problem. It means every physician must feel the responsibility of reducing infant mortality. Therefore, a paper of this nature should be given before a general meeting. We must have joint co-operation.

Herbert Kauffman tells us the most valuable quality on earth is a constructive imagination, and this is surely necessary in regard to saving infant life and producing a virile nation. Are some of you specialists thinking, "This is not my problem; I practice neither obstetrics nor pediatrics?" Oh, yes; but internist, what about those advanced cardiac and

kidney cases under your care in mothers of child-bearing age? You genito-urinary men, what about those gonorrheal cases? Dermatologists and syphilologists, surely you see the important part you play. Tuberculosis specialists, what about that tuberculous wife you are attending? Orthopedists, those spinal curvatures?

According to Whittridge Williams, 7 per cent. of all young babies die before, during or within two weeks after birth, 50 per cent. of which could be helped by prenatal care. The United States stands third highest for infant mortality rate out of thirteen civilized countries. Pennsylvania stands third highest of States. Philadelphia and Pittsburgh third and fourth highest of the larger cities with population over 300,000.

Therefore, I repeat, a paper on child welfare should be given before audiences composed of all different specialists and general practitioners. Who is more conscious of the need of saving the babies than the pediatricist? But to talk to him on the subject, when the majority of babies die before they are one month old, is similar to the pastor taking those members present to task for non-attendance at church.

The obstetrician does play a most definite part, for 50 per cent. of these young babies that perish can be saved by prenatal care.

While reconstructive work is both interesting and necessary, it does not compare with the fascinating constructive work of the obstetrician, who in a certain sense molds and fashions the health and well-being of this little "unseen reality." He is the convoy of this hidden life and is conscious of the dangers which are apt to surround and beset it, and it is his great privilege as convoy to endeavor to have the little one reach its port in safety. While the life of the obstetrician is strenuous and arduous, with many shadows, it is also accompanied by wonderful "high lights."

Those who have studied the causes of high infant mortality rate, have gradually come to see that marked progress is to be made only through the prevention of sickness in infants. Evidently prenatal care must begin with childhood, especially at the period of adolescence in both sexes. Recent efforts to safeguard child labor, to inform boys and girls concerning the dangers of venereal diseases, and to provide proper food and hygiene for youth, must be at the foundation of such endeavor.

Good wages which will permit early marriages, abolition of tenements, and the substitution of model houses are all of importance.

When we realize that through public health work, the death rate from typhoid fever, tuberculosis, diphtheria, measles, diarrhoea and enteritis have steadily decreased, and that the deaths during early infancy and the puerperal state have gradually increased during the last ten years, we know that it is time for definite action. The mortality among infants in Pennsylvania during the first year of life is over 25,000, or 21.8 per cent. of the total mortality of all ages and from all diseases. Forty per cent., or over 10,000 of the deaths in the first year of life, occur in the first month, and almost two-thirds of these deaths occur in the first week. One-third of all deaths under one year are due to premature births, malformations, and convulsions, and 80 per cent. of these deaths occur in the first month. It is evident that improper food or feeding is a negative factor in these deaths. The lives of most of these infants were uninfluenced by conditions arising after birth.

To the close observer of the present day the penalty exacted in consequence of violation of health laws, demands of society, strain, perverted habits of modern civilization, and artificial life coupled with a diseased body at the onset of gestation or acquired during its presence results in broken maternal compensation, often followed by physical and nervous wreckage giving to humanity a weak, undeveloped, poorly-nourished child of uncertain potential value.

In view of the above unfavorable obstetrical findings, the prospective mother should be informed of the absolute necessity of insuring safety to self and her unborn by frequently presenting herself for the purpose of personal health inventory, receiving instructions as to diet in keeping with the individual case, the kind and degree of exercise, and the character of her clothing. The importance of fifteen day (or oftener if found necessary) reading of blood pressure, checking of renal output as to amount, chemical, microscopic findings, normal and abnormal constituents. These frequent antepartum observations should furnish occasion for noting patient's physical index, included under early or late gestational pathology as manifested by the presence of undue vomiting, bilateral headache, increased arterial tension, ocular manifestations,

gastric disturbances, perverted nervous phenomena, edema, general diminished excretions and secretions; such gestational pathology if present in the mildest degree stands chargeable with an assault on maternal and fetal life presenting a clinical picture.

It is hard to understand in the face of the above diseases, dangers and loss of life, how the most conservative physiological "standpatter" can fail to realize that there is a necessity for antepartum care.

The necessity of conservation of mother and child life is apparent when we are confronted with statistics from trustworthy sources. The annual number of uterogestations in the United States approximates 2,650,000. From this number no satisfactory method has been instituted whereby the enormous loss of fetal life may be computed in consequence of expulsion of the products of conception before viability. One hundred and fifty thousand mothers gave birth to full-term dead babies; during the first four weeks of infant life another 115,000 die, showing the annual number of lives lost to be 280,000 in the execution of what is regarded as normal and supreme function in the life of the child-bearing woman.

Quoting from C. A. Ritter, who states that approximately 30 per cent. of all pregnancies are in some degree abnormal; Four per cent. of all gestations present definite toxic or pre-eclamptic danger signals; 2 per cent. of expectant mothers show heart lesions; 9 per cent. possess some degree of pelvic contraction; 3 to 5 per cent. are affected with syphilis; 6 per cent. present abnormal blood pressure; antepartum hemorrhage is present in 1 per cent., and 0.7 per cent. show evidences of tuberculosis. Seven per cent. of all deaths of women between the ages of 18 and 40 are caused by puerperal infection. At the present time about 85 per cent. of the child-bearing women of America are accorded no saving degree of antepartum care. To the question, then, whether the prospective mothers are willing to receive supervision along these lines when approached on the grounds of personal safety, the answer coming from those who have personally applied the measures is largely in the affirmative.

But how are we going to lessen this unnecessarily high infant mortality rate? One of the first things we must do is to raise the enthusiasm of the physicians over the necessity of increased prenatal work. We must have a proper birth

registration of all living and stillbirths; all births, whether legitimate or not, must be reported, birth registration to be made within forty-eight hours in place of ten days after birth as now is the rule, so that the municipal doctors, nurses and social workers can get these cases earlier for the postnatal care.

In connection with the question of midwives, the same supervision should be maintained throughout Pennsylvania as has been carried out in Philadelphia and Pittsburgh since they cannot give prenatal or postnatal care.

We should have the establishment of a greater number of maternities and health centers all over the country; every county should have at least one maternity hospital and numerous health centers with a visiting nurse; as some one has said, as broadcast over the country as our rural postal delivery. One of the reasons for this is because of the distance of the patient from the doctor or maternity, whereas, if there was a maternity hospital in each county there would be less difficulty in transferring the patient to this institution in case of necessity, and thereby the lives of many mothers and babies that otherwise might be lost will be saved. Cities should be divided into obstetrical zones with numerous prenatal and postnatal clinics in each zone, and patients should be advised to attend clinics or to go to the hospital in the zone nearest their homes, thus lessening the likelihood of their not attending a clinic because of the great distance; this will also enable us to prevent overlapping in our work.

We should also consider the Sheppard-Towner Bill which provides for the protection of maternity and infancy and which did not become a law because Congress had not at any time been shown that it *must* be passed *now*. Is it because babies have no votes, no organization? They write no letters. They visit no law-givers in their homes in the long vacation of Congress from July to December. They demand no pledges from candidates. They join no political parties in times of political stress. They punish no political enemies. They buttonhole no law-givers. They carry on no publicity campaign. Can it be that these are the real reasons why Congress continues to let babies die while it votes tens of millions for other purposes, when this bill calls for a very modest sum gradually rising in several years, to \$4,000,000. If so, is not this a challenge to all citizens, and especially to every public-spirited organization, to exact now a written reply from each

Senator and Representative to the question: Will you vote this year to pass the Sheppard-Towner bill to save mothers and babies?

In order to lower this mortality rate much can be accomplished by free distribution of booklets on prenatal care, infant mortality and kindred subjects, issued under the Children's Bureau of the United States Department of Labor aided by the co-operation of local Boards of Health in securing standardized literature bearing upon maternity, the same to be furnished prospective mothers through distribution to physicians by the secretaries of county societies. Also, by maternity welfare propaganda and increased newspaper publicity. Maternity publicity has always been handled too severely, too gravely, too technically. When you are discoursing on prenatal care in the intimate circles of your professional friends, be academic to your heart's content. When you are educating the public on this or any other subject—be human. Remember you are telling it to the world.

In this prenatal supervision, intensive obstetrical service fulfills its broadest mission, reaches its fullest success in the successful delivery of a living, healthy child from a sound mother.

DISCUSSION OF PAPERS OF THE BUREAU OF PAEDOLOGY.

DR. SIGMUND RAUE, Philadelphia: I should like to say, with reference to the differential diagnosis of hemorrhagic diseases of the new born, that we must, first of all, be sure that we have a real case of hemorrhage. At the autopsy, these children show circular ulcers in the intestines and stomach, very frequently, and the symptoms are fulminating. The child will have been apparently well yesterday; and you see it today, and find that it is exsanguinated, absolutely washed out, and that the stool consists of a dark, tarry mass, which looks like the meconium stool passed in the first three or four days. But beware of meconium that lasts more than the third day. I tell my nurses and students that they should call the attention of the doctor to anything that appears to be meconium after the third day. If we do not give immediate attention to these infants, they die of hemorrhage.

I should like to recite an interesting observation regarding the action of certain drugs on the new born. Dr. Terry

mentioned a case in which salol had been given to the mother and had made the child sick. The case I wish to report was one of persistent convulsions in a new born infant. We could find no cause for the condition, yet the child had persistent convulsions. I looked at the umbilicus, but there was no evidence of infection. It was, however, entirely covered with pure boric acid powder. I thought that this might be irritating and, as a matter of precaution, had the boric acid removed. The convulsions stopped, and the baby never had another.

The next was a case of rash on the child's face. The baby was only ten days old. The nurse was careful and persistently washed the lesions with boric acid. I said to the attending physician, "Let us stop the boric acid." We did so, and used normal saline; and the rash disappeared. I feel that boric acid is quite toxic to many infants, particularly the newborn.

DR. HOWARD TERRY, JR., Phoenixville: I think that Dr. Raue has given us the reason for this very unfortunate and troublesome symptom that we find in the newborn, namely, bleeding from the cord. You have all, I suppose, as I have, had a very slight oozing from the cord, which had apparently stopped and, in the course of eight or ten hours, have been called and told that the child was almost exsanguinated. Hemophilia, mentioned as physiological in the first few days, evidently covers that.

I want to speak of a case that Dr. Raue saw for me, three weeks after birth. The attending physician was, at the time, feeding the nursing mother salol for an intestinal condition. Being excreted by the mammary gland, it caused a markedly irritating gastro-enteritis, which, I believe, was terminated in a marked fat intolerance, for which we had to feed an absolutely fat-free mixture. I do not think that we homœopaths would do that. While the infant was supposed to have been premature, our measurements did not corroborate that.

Another point that Dr. Raue reminded me of was the brown liquid stools which we occasionally have from starvation in infants. You will have gastro-enteritis, for which you cut off milk products and give only barley water; and in a few days you get a brown liquid stool, very irritating, I think that is due to starvation; and if you give milk again with care, it will clear it up.

Another thing is the effect of pre-natal education of the mother. I do not know whether you have as much trouble in getting the pregnant woman to come to see you at regular intervals, as I do; but I feel that this is merely a matter of education of the laity, rather than education of the profession. They

will not do it. You simply have to start at the bottom and educate the mother before she will come in and allow you to examine her.

DR. JOHN G. WURTZ, Pittsburgh: Last year, at the Pittsburgh Homœopathic Hospital, there were 418 deliveries in the Obstetrical Department, including private ward cases. We have been taking the Wassermann reaction with blood from the umbilical cord, and 350 Wassermann reactions were done in this way. Sometimes there was not a satisfactory specimen, and sometimes during the delivery there may have been an accident, liberating the serum. So I venture to say that at least 350 Wassermanns were done on the umbilical cord. Among these, I know that there have not been more than five positive Wassermanns. That is a low percentage, and I think that there is something in the blood from the umbilical cord which interferes with the Wassermann reaction. I say this because, suppose we get 5 per cent. of positive Wassermanns in new-born children, I think that is a low estimate for syphilitic children; because I think that it is safe to say that the majority of ward patients are girls from homes, and a good many are negroes. A good many of these children are illegitimate; so, from the type of patients, you are led to believe that there should be a higher percentage of syphilitics. We do not go by the umbilical blood, when not sure, but do a Wassermann on the blood from the infants.

DR. WURTZ, answering Dr. Raue: At about the time when the infant is ready to go out of the hospital, at about the age of two or three weeks. When it is there two weeks to a month, we get blood from the anterior frontal for a Wassermann. I have checked up, in several cases, with the umbilical blood. All have been negative. I have never got a positive reaction from the mother, and a negative one from the infant. Occasionally there is something in the blood from the cord that is anti-complementary; and one does not get a sharp reaction. It is necessary to repeat the test, and we take the blood from the infant; but in all cases the test has been negative. I am not prepared to state that umbilical blood is unreliable, but I am leaning toward that belief.

It is unfortunate that with the city, the country and the State Boards of Health, you send in a swab with a diagnosis of diphtheria, and get the report that it is negative or positive. They should report what the predominating organisms are in the culture. Often pneumococci will produce a fibrinous exudate. I have seen cases in which physicians were called in to take cultures from the throat, and there would be

apparently a diphtheritic membrane; but it would really be a pneumococcic sore throat, resembling diphtheria in the throat, and in the clinical course, temperature, etc. I do not think it is a good thing to diagnose diphtheria from a smear. The diphtheria bacilli are the most rapidly growing of all bacteria, and you can get a growth in eight hours on suitable media. It is a good thing to make a swab from the throat, because sometimes Vincent's angina may be taken for diphtheria. I think it would be a good thing if the Board of Health would report not only positive or negative findings, but also the organisms present in the culture, and would make a smear for Vincent's angina; because people believe that they cure diphtheria by a simple remedy, when they really do not have it, but Vincent's angina, which will clear up under the use of iodine.

NEUROLABYRINTHITIS.

BY

GEORGE W. MACKENZIE, M.D., PHILADELPHIA, PA.

(Read before the Homœopathic Medical Society of Pennsylvania, Sept., 1920.)

THE writer has been privileged to prepare two papers within the last six months on the subject "Neurolabyrinthitis Syphilitica," presented from different angles. It occurred to him at the time that it would have been a better plan to have started with the broader and more general subject of "Neurolabyrinthitis," following it up with papers dealing with the different types according to the etiology in a more or less orderly manner. This plan was prevented by reason of the fact that the title of the first paper was assigned to him by the secretary of the section who had charge of the program. As a result the writer is beginning now where he should have begun in the first place.

Neurolabyrinthitis, as its name implies, is an inflammation of the eighth cranial nerve stems and their final distribution in the labyrinth or inner ear. The plural is used for the reason that the so-called eighth nerve is not a single nerve, neither is it a divided nerve, but is comprised of two separate

nerves having separate origins, superficial and deep. They are the cochlear, the special sense nerve for hearing, and the vestibular, the special sense nerve for orientation. That these two nerves should enter the temporal bone through the one foramen—the internal auditory—is insufficient evidence upon which to base the assumption that they are one. Nor have these two nerves anything in common physiologically. Besides it is possible for one of them to be involved in a pathologic process to the exclusion of the other. A number of such cases have been reported in the literature by careful observers. The writer, however, wishes to challenge the accuracy of some of these reports, for he knows of at least one case so reported, where he also had the opportunity of studying the case,* in which the report did not agree in detail with his findings. The writer's present opinion, based upon careful investigations covering a period of twelve years, is that we are prone to make insufficient and inaccurate observations and from these false premises are led to wrong conclusions, and worst of all we rush them into print. It is because of the frequency of these unfortunate occurrences that the writer feels justified in calling attention to the importance of careful technique in everything medical, the lack of which has led to so many errors in medicine. One could not, even though he wanted to, believe everything that he reads to be the whole truth, much as the author might have intended it, for in summing up all that has been said upon any particular subject he will find it too frequently amounting to a mass of contradictory statements. To ascertain the truth one must choose to find it by one of two ways: the first is to go through the literature, carefully sifting out the grains of truth from the chaff of untruth; a second and better method is for one to make careful investigations of his own, free from any preconceived notions, and at the same time using the most careful technique.

Neurolabyrinthitis, as stated, implies an inflammation of the eighth nerve and inner ear. The question arises, What evidence have we at hand that such a condition exists? The answer is, Not an abundance, yet sufficient, basing the claim on the pathologic studies of the temporal bone of syphilitics.

If we compare the pathologic findings of the several investigators into the pathology of temporal bone syphilis we find contradictions quite evident; for instance, Mayer, Hoffer and Assai contradict the assumption of Baratoux, Panse

and others that the hemorrhages found in the inner ear by these earlier investigators had anything whatever to do with syphilis, for the reason that hemorrhages into the labyrinth are just as common an occurrence in cases of death from suffocation in individuals free from syphilis as in those affected with it. There are other reasons for doubting, not the sincerity of the earlier investigators so much as the inaccuracy of their observations; for instance, a lack of consideration of extraneous conditions including post-mortem fouling. The objection of the later investigators to the conclusions arrived at by the earlier ones are, therefore, well founded. From the mass of evidence collected, especially by these later investigators, there can be no doubt that syphilis is prone to produce certain definite changes in the eighth nerve, in the spiral ganglion to a less degree, and in the nerve-endings in the labyrinth to the least.

Some other types of eighth nerve neuritis have been studied, but to less extent, while a few have received no attention whatever from the pathologic standpoint. Generally speaking, all have received more attention from the clinical than from the pathological standpoint, for the reason that there has been more opportunity to study cases clinically on account of the relatively small number of such cases that come to autopsy as compared with the total number that present themselves for clinical study. Neuritis may affect one or both branches of the eighth nerve. In the case of involvement of a single branch, which is rare, the other branch is generally found to be involved, but to a degree so slight that the average examiner assumes it is not involved at all. The number of cases of single branch involvement appears to grow less as the technique for examination improves. There appears to be a greater tendency to involvement of the cochlear than the vestibular branch. This greater vulnerability of the cochlear branch has generally been accepted and explained on the fundamental principle that the cochlear nerve is relatively younger phylogenetically than the vestibular nerve. Exceptions to this rule are quite a few. The reasons for exceptions may be explained in one of two ways. One is that every toxic agent acts in its own peculiar way, in other words, it shows a selective affinity for a particular part of the anatomy as instanced in the selective action of tobacco for the maculo-papular bundle in the case of the optic nerve as is well known to the oculist. In

a similar manner may not a particular poison act more intensely upon the vestibular than the cochlear branch of the eighth nerve and vice versa in the case of another poison? Furthermore, do not certain toxic agents show a selective affinity for one side of the body over the other? Another explanation is that some examiners do not give the same attention to one branch of the nerve as to the other. Otologists are to be found who are strong in the knowledge of one branch and relatively weak in the knowledge of the other. The examinations conducted by some men are actually slovenly as viewed by those who have learned to practice careful technique.

Eighth nerve neuritis may occur unilaterally or bilaterally. It may occur as an isolated neuritis or in combination with neuritis of other cranial nerves—multiple neuritis superioris. It remains a problem for someone eventually to bring order out of the mass of evidence which is as yet insufficient for our need. It is not a difficult problem for a capable otologist to determine the presence or absence of eighth nerve neuritis and estimate the degree of involvement when it is present. On the other hand, the solving of the question of etiology is not so easy in those cases belonging to other than the syphilitic type. At the present time the problem is altogether one of exclusion, which is cumbersome for the diagnostician, costly to the patient, and one that appeals but little to the unscientific mind. Only after the problem has received considerably more attention than it has up to the present time will we be able to point to the particular causative agent in a case of neurolabyrinthitis as effectually as the oculist can point to tobacco as the causative agent in a case of central scotoma.

ETIOLOGY.—The etiology of neurolabyrinthitis, although in a general way comparable with that of neuroretinitis, is not exactly the same. For instance, neuroretinitis is prone to occur in the course of albuminuria from Bright's disease, where it assumes certain unmistakable characteristics; on the other hand, the eighth nerve and inner ear are only exceptionally involved. Again, other acute infectious diseases commonly affect the eighth nerve and rarely the second. Quinine and the salicylates will hit the eighth nerve much oftener than the second.

According to the etiology, neurolabyrinthitis may be divided into four types, as follows:

- I. The post acute infectious fever type.

- II. The post chronic infectious type.
- III. The exogenous toxemic type.
- IV. The endogenous toxemic type.

The post acute infectious fever type includes those cases of neurolabyrinthitis which occur during or shortly after an attack of one of the acute infectious fevers. The acute fevers more prone to cause neurolabyrinthitis are diphtheria, influenza, scarlatina, measles and typhoid fever; to a less degree the remaining diseases of this group.

As to the exact nature of the toxin present in each case and just how it reaches the nerve to affect it but little is known at present. That it, on the other hand, does happen now and then there is ample clinical and pathologic evidence.

A few words concerning scarlet fever: No clinician of experience will doubt the frequency of middle ear affection as a sequela of this disease. Concerning the effects of scarlet fever on the eighth nerve the average general practitioner knows nothing, and yet scarlet fever may cause deafness by reason of involvement of the eighth nerve, either coincidentally with or independent of involvement of the middle ear. How to recognize inner ear or eighth nerve complications of scarlet fever or other of the acute infectious fevers belongs to the subject of diagnosis.

The relative frequency of neurolabyrinthitis as a complication of scarlet fever has not been established because of insufficient investigations up to the present time. The frequency of eighth nerve involvement in scarlet fever, and this applies with equal force to the other diseases of this group, depends in a measure upon the character of the treatment the case has had. This is a problem that has as yet received but little attention. A single experience which the writer will cite—and he has had quite a few of the kind—was sufficient to convince him that the etiology of eighth nerve neuritis is not invariably what it is supposed to be. The case was that of one of our Philadelphia physicians. He reported to the writer with the history of impairment of hearing following a cold in the head. The subjective hearing tests did not bear out the opinion voiced by the patient that he was suffering from a middle ear catarrh for the findings were the very opposite; in other words, they corresponded to an inner ear or nerve involvement. This prompted a closer inquiry into the history of the case, especially regarding the treatment he had taken. Whereupon he

told how he had taken a combination tablet containing cinch-
onine salicylate to break up a cold. Upon advising him to dis-
continue the medicine and giving him *nux vomica* in its stead
he recovered completely from his poisoning after a lapse of a
few weeks, and with normal hearing. Just how often cases
of drug poisoning of the eighth nerve is mistaken for the
acute post-infectious type is as yet an unsolved mystery. This
case is cited not for the purpose of minimizing the importance
of the acute infectious diseases as etiologic factors in the caus-
ation of neurolabyrinthitis; for, on the contrary, there is a con-
siderable number of such cases where the patient has taken no
medicine for the original infectious disease. In fact, many of
these patients never knew that they had an infectious disease
until some keen observer later pointed out the fact to them,
basing his conclusions upon the sequela of the disease. Par-
alysis of the muscles of deglutition following a simple sore
throat (diphtheria) for which the patient was never treated
has been seen so often by most of us as to force us to the
belief that the paralysis is due to a post-diphtheritic neuritis.
Many other illustrations might be cited to prove the existence
of post-infectious neuritis involving the eighth nerve alone or
in combination with other nerves.

The post-chronic infectious type includes those cases of
neurolabyrinthitis which occur in the course of one of the
chronic infections; the more important of these infections are
syphilis, tuberculosis and leukemia. These diseases show in
common the tendency to produce granulomatous infiltrations,
which subsequently break down because of lack of nutrition,
or else tend to heal with the formation of scar-tissue where
conditions are favorable by reason of suitable treatment, or
otherwise. Of all the infections, acute or chronic, syphilis is
perhaps the most common cause of neurolabyrinthitis. If the
clinical findings of Wanner, O. Beck and Wilcutt, in so far as
shortening of bone-conduction as a sign of the disease are to
be accepted, then syphilis outweighs all the other infections in
importance in the etiology of neurolabyrinthitis. There is am-
ple evidence that the eighth nerve is frequently involved very
early, a few weeks after the appearance of the chancre and be-
fore the advent of the secondary manifestations. Politzer re-
ports a case of eighth nerve involvement beginning seven days
after the appearance of the chancre.

Syphilitic nerve deafness has received more attention

clinically and pathologically than all other forms of neuro-labyrinthitis, for the evident reason that there are considerably more cases of that kind. As the author has already devoted quite a large amount of space elsewhere to the syphilitic form he will omit a discussion of it at this time. Since leukemia is a rarer form of disease than syphilis, the leukemic form of labyrinthitis has received correspondingly less attention than the syphilitic. Neuritis is quite common in leukemia and leukemic infiltration of the eighth nerve has been studied pathologically.

Tuberculous neurolabyrinthitis is not uncommon; it occurs late in the disease and the only reason it appears to be a rare occurrence is because the condition is rarely looked for. The argument applies to neurolabyrinthitis of all forms. It is a rare exception for a patient suffering a febrile disease and complaining of impairment of hearing to obtain an examination sufficiently accurate to determine the location and extent of the lesion responsible for the impairment. The reasons are: first, that the average practitioner knows practically nothing about hearing tests, and especially about the use of tuning forks, which are so essential an aid in locating the site of the lesion in the case of deafness.

Secondly, he knows nothing about the subject of deafness occurring in the course of a febrile disease further than the fact that scarlet fever and measles are prone to produce a discharge from the ears which in most instances clears up spontaneously, and he is prompted, therefore, to guess the answer to the mother's question that the hearing trouble will clear up after awhile. His guess, fortunately, is more often right than wrong. But when he guesses wrong and thereby deprives the patient of attention at a time when attention means so much to the patient's future hearing he has made a mistake that is sad indeed. How do we specialists come to know that this is so? From the histories the patients give us, a history which has been repeated so often and in the same style that we cannot help but come to believe it eventually.

Since the time has already been exceeded the writer will reserve for another occasion the consideration of the remaining types of neurolabyrinthitis.

EYE ULCERS.

BY

J. W. STITZEL, M.D., HOLLIDAYSBURG, PA.

(Read before the Homœopathic Medical Society of Pennsylvania, Sept., 1920.)

POSSIBLY next to conjunctivitis, ulcers of the cornea are the most frequent eye affection the general practitioner is called upon to treat.

It is not my intention to discuss this subject from the standpoint of a specialist, but rather from the standpoint of the general practitioner of medicine. A certain well-known ophthalmologist, in speaking of ulcers of the cornea, says: "Ulceration of the cornea is always a terminal stage of some inflammatory disease of that structure, resulting in its molecular death and regeneration by scar tissue."

The pathology is much the same in all forms of corneal ulcerations. In a typical case we first have infiltration, or inflammation of the corneal tissue followed by a necrotic, or destructive process, which finally terminates in repair, or filling up of ulcer with connective tissue and consequent scar formation at the site of ulceration. The cornea thereby ceases to remain transparent as before the ulceration, but becomes cloudy, hazy, thus permanently interfering with vision. Unfortunately, all cases do not stop even with the loss of a certain amount of visual acuity. While the membrane of Descemet is not liable to ulceration, yet on account of its thinness and the loss of other corneal tissue overlying it, it often ruptures when exposed and we have a consequent prolapse of the iris which becomes imbedded in the cornea during the process of regeneration and we have a dense leucoma, and the danger of glaucoma that may develop from the irritation of the adhesions and the disturbance in the circulation of the eye with its consequent staphyloma and loss of the eye necessitating its final removal.

From what has just been said, you can readily appreciate the importance of early recognition of ulcers of the cornea in order that prompt measures may be taken so that the destructive process may be limited as much as possible; for even in superficial ulcerations the resulting scar interferes to some extent with the future usefulness of the eye, and as the

destructive process or ulceration progresses, the danger increases from a more or less permanent loss of vision to complete loss of the eye by its removal.

Of course, the location of the ulcer adds to the seriousness of the case. A central ulcer, be it ever so simple, always causes a certain degree of impairment of vision according to the extent of the corneal tissue involved. While a peripheral, or marginal ulcer, if simple, may not affect vision, yet there is always the danger of its becoming infected with the consequent destruction of corneal tissue even to rupture of the cornea and impairment of vision.

I feel that the profession as a whole is not fully alive to the importance of early recognition of *Corneal Ulcerations*, and I have, therefore, written this paper with the hope that my humble efforts may impress upon the members of this Society the importance of early recognition and prompt treatment of all eye ulcers coming under their observation, thereby conserving vision as much as possible by limiting the destructive process by early and prompt treatment.

When a patient comes to the doctor with a ciliary injection, marked sensitiveness to light and almost complete inability to open the eyes, or even have them forced open by the physician by separating the lids, as we so frequently find in children, the doctor should appreciate the significance of the picture just drawn and should at least suspect some involvement of the cornea, and immediately make an inspection of the cornea.

I am sure every one present should be able to make a diagnosis of ulcer of the cornea upon inspection, and if so superficial as to not be visible by ordinary inspection, the dropping into the eye of a little fluorescein will readily outline the ulcerative process if present.

It is not my intention to discuss the various forms of eye ulcers from a diagnostic standpoint. Certainly any one should easily recognize the small grayish spot at the corneo-scleral margin, or on the cornea itself found in the simple ulcer, the golden yellow spot on the cornea of the purulent ulcer, or the curved, wavy yellow line of ulceration rapidly spreading over the cornea, unattended by vessels of repair, leaving in its path broken down tissue as found in the serpiginous ulcer. At least presence of pus in the anterior chamber should arouse suspicion as to the seriousness of the case and

prompt measures taken to control it. Presence of pus in the anterior chamber is always a mighty serious condition and is beyond the sphere of the general practitioner, so I will not discuss its removal.

While corneal ulcers may occur without obvious cause, they can usually be traced to injury, impaired nutrition, as in facial paralysis, and deformities of the lids, infection, the simple ulcer often becoming infected with one or more of the various micro-organisms as the streptococcus, staphylococcus, pneumococcus, etc., and extension from inflammation of surrounding tissues, as in trachoma; ulcers frequently occur as a result of certain constitutional conditions, or diseases, as the well known phlyctenular ulcerations of childhood so frequently found in the so-called strumous diathesis.

The treatment of corneal ulceration, of course, should commence with the removal of the cause. If due to some constitutional disease, the properly indicated homœopathic remedy should be prescribed, and right here I want to say almost any remedy in our *materia medica* may be indicated, especially constitutional remedies. I know I have succeeded many times in treating phlyctenular ulcerations in children after my old school friends have failed. Too much attention cannot be given to the selection of the indicated remedy in cases where some constitutional condition as alterations in nutrition, dentition, some of the eruptive diseases, tuberculosis, syphilis, etc., are the real cause of the condition.

Before leaving this class of cases, I want to emphasize the importance of plenty of good fresh air, good, nourishing food and exercise in these cases.

Get the patient out in the sunshine, put on dark glasses and for Heaven's sake let them get plenty of fresh air, and good, substantial food, and eliminate sweets, candy, pie and cake, coffee, etc., etc., from the dietary. Do not keep these patients penned up in dark, illy ventilated rooms, as is frequently done. Insist upon their getting out. On the other hand, as many eye ulcers are strictly local, are due to injury followed by some form of infection, it is absolutely criminal to depend upon the indicated remedy alone and sit down with folded arms after the internal remedy has been prescribed. You might just as well give aconite where a foreign body is still imbedded in the cornea. Remove the foreign body and then prescribe aconite if you wish, but first remove the cause.

The treatment of corneal ulcerations resolves itself into the local and constitutional. Usually one predominates in importance over the other. It may be either one, but the two should always go hand in hand. As I have just discussed the one, I will now discuss the other, or the local treatment.

In the treatment of eye ulcers, as in other conditions of the body where an inflammatory process is present, rest is of the greatest importance. The eye is best kept at rest by the instillation of atropine. Atropine should, therefore, be used **in all cases of corneal ulcers** where absolute rest is essential in the treatment. The compress bandage also plays an important part in the treatment of eye ulcers where rest is necessary. When properly applied it prevents the irritating effect of the eye-lids rubbing over the ulcerated surface in the opening and closing of the eye. Do not forget the usefulness of the compress bandage in many of these cases. Lastly, but not least by any means, we come to the strictly local treatment of these cases.

I will first take up the simple ulcer as it, when not properly and promptly treated, often becomes the purulent ulcer. As a general measure in all forms of corneal ulcers, some mild antiseptic as bi-chloride 1-10000, formalin 1-6000 should be instilled into the eye at regular intervals to keep it as nearly antiseptic, or sterile, as possible. As a local measure in simple ulcers that do not tend to spread rapidly, and where stimulation, as well as control of the ulceration is necessary, I have found the application of pure tincture of iodine to be the most satisfactory agent in my hands. I also use it in purulent ulcers after I have controlled the spreading of the ulcer by some more active agent as trichloroacetic acid 15 to 25 per cent., or the actual cautery.

After cocainizing the eye, I apply the pure tincture of iodine on a probe wrapped with cotton for at least a minute, being careful the ulcer is touched and the iodine does not spread beyond the ulcer, or to the healthy cornea. This is not painful at time of application, but I always tell the patient it will pain for some time afterwards, but that the ulcer will immediately begin to heal and it will. I care not how indolent the ulcer may be, or how long it may have existed, I have yet to see a case of simple ulcer that has not immediately yielded to this treatment.

I have even given a general anaesthetic to small children in

order that I might apply it thoroughly and the case would immediately begin to improve and get well with one thorough application, even though it had resisted other measures for months.

I usually apply less thoroughly under cocaine anaesthesia and repeat in three or four days, but I have made applications as often as every other day. Some authorities get good results from the application of iodine vasogen 10 per cent., but I have had no experience with it. Undoubtedly it would be less painful, but I have never felt justified in changing from a certainty in my hands to an uncertainty.

In the simple phlyctenular ulcerations of childhood locally I have usually gotten good results from the instillation of atropine and yellow oxide of mercury ointment 1 per cent., but even in these cases I have resorted to iodine when the patient was some distance away and I wanted to get more prompt results. Of course, in those cases fresh air, good, substantial food, exercise and the properly indicated remedy also play an important part in the successful treatment of the case.

In these cases I want to warn the practitioner against overlooking conditions in the nose and throat.

Other agents are frequently used as touching the ulcer with nitrate of silver, carbolic acid, etc., but I have never found it necessary to resort to them in simple ulcer.

In infected ulcers, such as purulent ulcers, or the rapidly spreading serpiginous ulcer, it is necessary to resort to more active measures to quickly control the destructive process. In these cases it is usually necessary to resort to some active cautery agent, either trichloroacetic acid, 15 to 25 per cent., nitrate of silver, or even the actual cautery to destroy the infected tissue, control the spreading of the ulcer, and limit the damage to the cornea, but it is not my intention to enter into a discussion of this phase of corneal ulceration, as I consider it belongs strictly to the province of the specialist and not the general practitioner. No general practitioner has any right to trifle with these cases.

In conclusion, I want to impress upon you the importance of the fact that when an ulcer is healed your work is only partially done. Much can be done to clear up the resulting scar always following corneal ulceration, and your work is not properly done until you have made every effort to clear up the resulting corneal opacity as much as possible.

Especially is this true if the ulcer has been central, or at least has extended into the pupillary area, and thus involved the portion of the cornea in the direct line of vision.

For this purpose much can be accomplished by the proper use of yellow oxide of mercury ointment in increasing dosage instilled into the eye and well rubbed into the cornea by gentle massage of the lids every night.

Another more recent agent and one that has given me some really wonderful results in the past few years is dionine 5 per cent. used night and morning in the same way. In fact, I now use it much more often in old cases than yellow oxide of mercury.

I have seen it do really wonderful work in some cases of corneal opacities even of years standing. Both remedies should be kept up for a prolonged period. A year at least and still longer, if improvement of vision is noted.

HERPES IRIS.—A. J. Chalmers and Norman Macdonald note in the *Journal of Tropical Medicine and Hygiene* that the present tendency is to look upon all forms of erythema multiforme including herpes iris, as being due to anaphylaxis caused by the absorption of some chemical product from the intestine or other passages, or from a diseased organ. The success of treatment by intestinal antiseptic therapy in certain cases offers some support to this theory. The essential features of herpes iris are the central vesicle or bulla, the surrounding rings of vesicles, the affection of the lips and mouth, the formation of several rings of vesicles outside the first, the slight constitutional disturbance, and the tendencies to recur if not properly treated. It is differentiated from its nearest ally, erythema iris, by the fact that in the former there is a vesicle surrounded by an erythematous blush.

The first aim in the treatment should be to find the site from which some form of chemical absorption is taking place. In one of the author's cases the intestinal tract appeared to be the only possible source of trouble. The patient was placed in bed and placed on restricted diet and given purgatives and salicin, with immediate and excellent results.—*New York Med. Journal*.

PSORIASIS.—De Rezende's "before and after" photographs of the case he reports show the prompt and radical cure of extensive psoriasis under "protein shock" treatment. It was in the form of 20 c.c. of normal horse serum, injected into the abdominal wall. An injection of 10 c.c. two days before had not induced an appreciable reaction, but the 20 c.c. caused fever for five days, reaching 103.5 F. the third day. By the eighth or tenth day the eruption had practically subsided.—*Brazil-Medico, Rio de Janeiro*.

EDITORIAL

IS STRYCHNIA SULPHATE A SPECIFIC IN THE TREATMENT OF TETANUS?

THUS is entitled an article appearing in the *Ohio State Medical Journal* for April, 1921. Its author is T. J. Savage, of Xenia, Ohio. The editor of the *Ohio State Journal* has the very pleasing habit, which is emulated by no other editor so far as we know, of making an editorial note and comment at the head of each contributed article. Ofttimes in perusing this valuable journal we have found the editorial comment as good if not better than the communication below it. At any rate, the editorial note concerning Dr. Savage's article is as follows:

"For years the antispasmodic, symptomatic treatment of tetanus was the only recourse in attempting to handle this dread disease. When anti-tetanic serum was first developed it was thought that the condition would respond with the same results as diphtheria, but it has been found that the serum is far more prophylactic than curative. While thousands of tetanic infections were, no doubt, prevented by prophylactic inoculations in the World War, magnesium sulphate had to be resorted to as a therapeutic agent in an effort to lessen the awful mortality of the tetanus cases that did develop. In view of the fact that Dr. Savage has found the use of strychnia sulphate 100 per cent. efficient in the cure of tetanus, in his long years of practice, it would seem advisable that research workers corroborate his clinical results by laboratory experiments and submit a scientific explanation of the therapeutic mechanism involved."

Dr. Savage has apparently gotten hold of a good thing, for he tells us that in a practice of forty-three years he has treated forty-seven cases of tetanus with strychnia sulphate to the practical exclusion of all other drugs without a single death. He is fully aware and does not hesitate to say that such a statement "seems so extravagant as to be almost impossible or absurd, but it is the absolute truth and susceptible

of proof." The author does not go into particulars as to the details of his treatment other than telling us how he gave the strychnia in two of his cases. In the first patient strychnia sulphate was given $1/30$ of a grain every two hours after he had failed with all other methods of orthodox treatment. Improvement began at once, and in 36 hours, the temperature fell to normal. " * * * delirium was replaced by sanity and only slight stiffness in the muscles of the jaw remained as a reminder of the grave malady, which had proved so nearly fatal." This was the first experience.

Case 2 reported was that of a boy six years of age, to whom strychnia was administered $1/60$ of a grain every four hours. "Improvement was almost immediate and within three days the temperature was normal and all violent symptoms had disappeared and the boy was convalescent." The author furthermore claims that during the past thirty years he has suggested the use of strychnia in tetanus to other physicians, and they have reported results equally good. Why this agent is not in more general use is a mystery to him which he is unable to fathom and he refuses to attempt its solution.

He, himself, speaking of the rationale of the treatment, makes the following statement: "In my opinion its curative action is based on the fact that strychnia acts as a stimulant to the pons and medulla, and as the germs of tetanus seem to exert their deadly power through these nerve centers, by partially destroying them and weakening the nerve currents that should flow through them the strychnia acts in an antidotal manner. May it not be that tetanus causes a paretic condition in these inhibitory centers that normally control spasmodic action and that strychnia restores them to normal activity?

"Whether or not its action is susceptible to scientific explanation, those who once use strychnia in a case of tetanus will continue to do so empirically in other cases on account of the clinical results, just as many other drugs, whose action cannot as yet be explained, are empirically used in other conditions."

Do not our readers recall that in the textbooks on medicine and in the lectures of our college days authorities were very careful in presenting in vertical columns differential diagnostic tables, enabling us to determine whether the given case is one of tetanus or one of strychnine poisoning? In

other words, the symptomatic resemblances are so pronounced as to have been known for ages. Strychnia, therefore, is, beyond all question, homœopathic to tetanus. It is pleasing to learn that someone has discovered a technique of administration that makes the remedy 100 per cent. efficient. The author attempts an explanation based on antagonism of remedy to disease. Of course, there must be antagonism of remedy to disease. This was taught by Farrington and his predecessors years ago. The selection of the remedy is based on the law of similars. The actual process of cure is as we have stated. We can call it antagonism by concurrence or any way we please, but the homœopathicity is there, nevertheless, beyond all contention.

TEA AS A CAUSE OF ILLNESS.

THINGS that we see daily we accept as a matter of course and give them little or no serious thought. This is wrong because oftentimes such a course on our part leads to the growth or development of serious evils. We have often felt that tea was an important cause of illness and even where it has not caused illness, we have had good reason to believe that its overuse is the foundation for peculiar temperaments, if not actually bad dispositions.

Many years ago we were consulted by a young woman of twenty-two who, by reason of serious nervous manifestations, had been advised, after due consultations of physicians and surgeons, to have both ovaries removed. A full examination of the case discovered that for years that girl had been taking from twelve to fifteen cups of tea daily. Here was a cause for illness far more likely to be active than was a hypothetical ovarian disease. The patient made an excellent recovery as soon as she stopped her tea drinking. More recently we examined a young man who had been turned down by an insurance company because of persistent rapid heart action and an alleged murmur. He was a very healthy specimen of manhood. His habits were excellent, except for the fact that he was drinking three cups of coffee daily and from six to eight cups of tea during the same period. This of itself could account for his tachycardia.

Quite naturally then we read with interest an article by Dr. M. Allen Starr, of New York, entitled, "Tea Intoxication," in the *New York Medical Record* for March 19, 1921. Dr. Starr shows that the average consumption of tea in the United States is now one and a half pounds for every person. In England, the average consumption is six pounds per person. When we come to realize that very many persons never take any tea, and infants and small children may be eliminated as possible users, we appreciate that the average consumption of tea among those who do use it must be very heavy. Dr. Starr reports a case from literature of a woman who took by mistake as a test meal, 300 grams of tea in 300 grams of water, equivalent in alkaloidal content to 135 grains. Within fifteen minutes the woman began to tremble violently, became very weak and fainted, had mild convulsive movements of the limbs and then vomited. The emesis continued for eight hours. She was pale and cold, had a rapid, feeble pulse, which after two hours became slow and remained at forty, for seven hours, gradually coming up to eighty. Her respirations were shallow and rapid. Her temperature was subnormal and her body was covered with a cold sweat.

From his own experience Dr. Starr presents three examples of less active poisoning, occurring in three members of a college football team. The patients suffered from marked tremor of the hands, restlessness, insomnia, loss of appetite, indigestion, and in spite of the very rigid and careful diet of the training table, nervous apprehension and depression of spirits. Careful investigation discovered that the athletic trainer had been giving the team large doses of tea. It was estimated that each man drank at least two quarts of tea daily. The three men in question evidently had not been able to endure this amount as well as the others and were suffering from tea poisoning. This supposition was confirmed by the results, for all the symptoms disappeared within a week, when the tea was withdrawn.

According to Starr it has been the custom of athletic trainers in many colleges to give strong tea before contests in athletics. Swiss guides also use it as a stimulant in the pursuit of their work. In various countries, including Russia and England, and during the war tea was used very freely for those who were called upon to make increased muscular efforts.

Chronic tea poisoning appears to be very much more common. In fact, we believe if the subject were properly investigated we would find many obscure illnesses disappearing upon its elimination from the dietary. There are many households where tea is served or consumed between meals. Wood, of Brooklyn, in a study of this subject reached the conclusion that about 10 per cent. of the cases of ordinary ill health among Irish servant girls are traceable to tea. The symptoms manifested are, in the order of frequency, headache, vertigo, despondency, palpitation of the heart, indigestion, insomnia, restlessness, mental confusion, constipation, loss of appetite and tremor.

The use of tea in this country has increased by 50 per cent. within the last few years, and it is easy to realize that within a few more, we may attain the English average of six pounds per capita. It is well known that individuals differ remarkably in their susceptibility to drugs and idiosyncracies as to food substances are far from uncommon. It is, therefore, reasonable to believe that there are many individuals who must react unfavorably to small doses of tea. The whole matter demands our serious attention. Tea has been described as the cup that cheers, but does not inebriate. We will be more practical if we alter this old adage to the cup that cheers and sometimes intoxicates.

Aside from the direct intoxication from tea we must also consider the astringent influence of its contained tannin, which must have a deleterious influence upon the mucous membrane of the stomach, if consumed in large quantities, weak though the tea infusion may be.

SAPRAEMIC GLYCOSURIA.

NOTWITHSTANDING the desire of authorities in medicine to be logical, it is not unusual for them in their reasoning processes to reverse the relationship of cause and effect; in other words, as it is sometimes termed in common parlance, "get the cart before the horse." Dr. Higginson in a very interesting article published in the *British Medical Journal* for February 26th, 1921, calls attention to what he believes is a very serious error in relation to our methods in the clinical

study of glycosurias: He starts out by presenting himself as a clinical example. In 1909 he suffered from a large carbuncle. An examination of his urine discovered a goodly percentage of sugar. He recovered from the carbuncle, the glycosuria disappeared and has remained absent ever since, although no dietetic precautions were taken. Dr. Higginson then proceeds to review literature for and against the proposition of septic diseases causing glycosuria. Literature in the main takes the ground that such suppurative disorders as boils, carbuncles and gangrene are the result of diabetes and its associated hyperglycaemia. We think that Higginson makes out a very good case indeed for the glycosuria being secondary to boils and carbuncles in a large number of instances. We are not satisfied at all that he proves the doctrine of a sapraemic glycosuria in cases of gangrene.

Our own experience as regards diabetes and boils, and it is not by any means a small one, has made us skeptical as to the frequency with which boils and carbuncles occur among diabetics for, strange to say, we have never experienced a single example of the combination. We have heard of carbuncles and diabetes in the surgical wards but never in the medical. About a year ago we were consulted through the courtesy of a colleague by a young man had had crops of boils and it was alleged also a glycosuria or diabetes. His family physician never was able to discover any sugar in his urine nor could we. We were obliged, therefore, to assume that the previous examiner had made an error in observation. Higginson's paper would seem to indicate that the glycosuria was the result of the boils.

This matter is quite interesting and we believe of some importance. It certainly has a very practical bearing upon the mode of life to which we shall subject alleged diabetics. Higginson's observations that patients with carbuncles and boils exhibit a diminished sugar tolerance is deserving of thought and should be worked out in the laboratories, for it is a matter that is very easy of proof or denial.

GLEANINGS

MEDICINE

Conducted by CLARENCE BARTLETT, M. D.

DIPHTHERIA BACILLUS CARRIERS.—Moss, Guthrie and Gelien investigated conditions found in an orphan asylum and after an elaborate study present the following conclusions:

"1. The carrier of avirulent diphtheria bacilli is not a menace to the community.

2. A positive throat culture, an elevation of temperature and a pathological throat condition without definite membrane formation are insufficient evidence on which to base a diagnosis of diphtheria with entire certainty.

3. Virulence tests are necessary to avoid inflicting needless hardships on carriers of avirulent diphtheria bacilli."—*Bulletin of the Johns Hopkins Hospital*, April, 1921.

CLASSIFICATION OF HEART DISEASE.—In a clinical lecture on Functional Activity of the Heart, Dr. T. Stuart Hart presents as a basis for clinical study the classification of heart disease as adopted by the Associated Cardiac Clinics of New York City several years ago. The classification is not perfect, nevertheless, it is simple, workable, and has the advantage of making the grouping of cases uniform in a large number of institutions.

"Class I. Organic heart disease—which has never given symptoms of cardiac insufficiency.

Class II. Organic heart disease—with symptoms of cardiac insufficiency in the past, none at the present time.

Class III. Organic heart disease—with symptoms, at the time of examination, of cardiac insufficiency following ordinary exertion.

Class IV. Possible heart disease—presenting abnormal physical signs the nature of which leads us to believe that they are not due to organic changes in the heart.

Class V. Potential heart disease—those in whom there is no evidence that the heart is damaged, but who are suffering from any infectious condition which may be accompanied by a diseased heart, e. g., syphilis, rheumatism, tonsillitis, chorea, etc."—*The Medical Clinics of North America*, March 1921.

VARIATIONS IN THE BACTERIAL FLORA OF THE UPPER AIR PASSAGES DURING THE COURSE OF COMMON COLDS.—Bloomfield has done much in working out the bacteriology of the upper air passages and its relationship to disease. Investigation has followed investigation, each contributing materially to our knowledge of the subject and doing away with the superstitions and follies of the past. This, his last series of the study, closes with the following most interesting discussion:

"On clinical grounds the view was advanced that the common cold is an infectious disease analogous to influenza, featured by the frequent development of complications in the upper air passages such as sinus infections, tracheitis, and otitis. A review of the literature showed no convincing evidence that any known organism is the primary cause of the cold.

"The cultural studies in the present report fail to show in uncomplicated

cases any variations in the flora which would enable one to select any organism or group of organisms as the cause of colds. On the other hand, where clinical complications occurred pathogenic organisms were definitely associated with them.

"We feel therefore that the primary cause of colds is probably an organism as yet unknown and certainly not one of the usual pathogens such as *Streptococcus*, *Pneumococcus*, *B. influenzae*, or *Staphylococcus*. But the primary cold, whatever its final cause, alters the mucous membranes in such a way as to allow secondary bacterial invasion and consequent frequent development of local complications. The cultures clearly indicate that such complications are due to a variety of bacteria such as *Pneumococcus*, *Streptococcus*, and *Staphylococcus*.

"In general it seems that the method of serial comparative study is necessary in working out the bacteriology of respiratory infections. Such a method allows one to pick out and interpret the significance of unusual organisms and also checks premature conclusions as to the etiological bearing of such organisms."—*The Bulletin of the Johns Hopkins Hospital*, April, 1921.

PROPHYLAXIS OF HAY FEVER.—Detweiler, (*Canadian Med. Assoc. Journ.*, January, 1921) discusses the present day conception of hay fever. In sensitive subjects the placing of the offending pollen upon the slightly abraded skin will cause a local reaction by the appearance of a wheal with a surrounding area of erythema. By this method of diagnosis the specific protein causing the disease can be ascertained, and the greatest success in treatment follows the prophylactic inoculations of the patient with a solution of the pollen protein. After grading the dilutions from 1 in 500 to 1 in 20,000, a preliminary skin test is made by placing a drop of the dilution upon a scratch and giving hypodermically as an initial dose 0.1 c.cm. of the dilution next higher than the one giving the positive skin test. Treatments should be given weekly, and should be completed by the time the attack is expected, so that the course of injections should begin three months before that time. Such a course should protect for a season, but it should be repeated each year for a few years. A change to a climate free from the offending pollen will be useful.

SPLENOMEGALY DUE TO ARSENOBENZOL.—Levy-Franckel (*Bull. Soc. de Ther.*, November 10, 1920), describes two cases of splenomegaly following injections of neo-salvarsan in a boy aged 13, suffering from lupus and a soldier suffering from psoriasis; in both the Wassermann reaction was negative. Leukaemia and pseudo-leukaemia could be excluded by examination of the blood, and the complete subsidence of the splenomegaly negatived the diagnosis of primary tuberculosis or a cancer of the spleen. Levy-Franckel therefore concludes, that the splenomegaly was due to the arsenobenzol although no previous cases of this kind have been described.—*The British Medical Journal*, Feb. 26, 1921.

GLYCOSURIA IN INFANTS.—Using the test of Benedict and Osterberg, Greenthal (*Amer. Journ. of Dis. of Children*, December, 1920) has found that the urine of all normal infants contains a determinable amount of reducing sugar; the amount of sugar excreted is proportional to that ingested. As the amount of sugar in the diet is increased the total sugar in the urine becomes greater, but the increase chiefly concerns the fermentable portion.

When the intake of sugar is constant, sugar excretion both as regards the fermentable and non-fermentable portion, is also fairly constant. In infants receiving from 6 to 7.5 per cent. of sugar the total sugar excretion in the urine ranged from 100 to 400 mg. a day. Benedict, Osterberg, and Neuwirth found that on an ordinary diet adults excrete from 600 to 1,200 mg. of sugar a day.—*The British Medical Journal*, Feb. 26, 1921.

PATHOLOGY

Conducted by JOHN G. WURTZ, M. D.

GENERAL LEUCOCYTIC RESPONSE OF THE GUINEA PIG DURING THE REACTION OF ARTIFICIAL IMMUNITY IN EXPERIMENTAL TUBERCULOUS INFECTION.—R. G. Hussey (*Jour. Exper. Med.*, March, 1921, xxxiii, No. 3, p. 337) infected guinea pigs with avirulent and virulent strains of tubercle bacilli and studied the effects of the injections on the circulating leukocytes. Special attention was given the lymphocytes which, though their function is but little understood, seem to be directly influenced. After injections of tubercle bacilli the author found an increase in the number of leukocytes with a relative increase in lymphocytes. Results of the study indicate a parallelism between lymphoid activity and resistance of the animals to tuberculous infection.

A PECULIAR FEVER OF INFANCY, PROBABLY DUE TO DEPLETION OF THE WATER RESERVE OF THE BODY.—C. G. Grulee and B. E. Bonar present the following interesting clinical observation:

"There occurs in infants who have been depleted by vomiting or rumination following the use of a thickened paste feeding, a temperature curve which can most easily be explained on the basis of dehydration, though it is not possible absolutely to rule out absorption of bacteria as a cause, either total or partial, of this temperature. This temperature is unaccompanied by toxic or gastro-intestinal symptoms, and there is evidence of a reduction in the water content of the blood during the febrile period."—*American Journal of Diseases of Children*, March, 1921.

THE PATHOLOGY OF BRONCHIAL ASTHMA.—Kamchorn and Ellis (*Amer. Jour. Med. Soc.*, April, 1921, clxi, No. 4, 525), report the postmortem findings in a case of bronchial asthma. The patient was a man whose family gave a history of asthma in four generations and who had had asthma from childhood to the age of fifty-two. In such a case one would naturally expect to find definite tissue changes, if such occurred in asthma. The facts however, were contrary; supporting Ellis' observations of twelve years ago, that, "No constant or definite changes in the bronchi of persons dying during an attack of this condition." These observations along with those of others, favor a support of the theory of spasm of the bronchial muscles.

PRECIPITIN RESPONSE IN THE BLOOD OF RABBITS FOLLOWING SUBARACHNOID INJECTIONS OF HORSE SERUM. Alexander (*Jour. Exper. Med.*, April, 1921, xxxiii, No. 4, 471), observed in an army hospital, that when patients were given intraspinal injections of antimeningococcic serum and later given serum intravenously, they experienced certain symptoms; flushing, restlessness, dyspnoea, cyanosis, vomiting, prostration. To further study this reac-

tion, rabbits were given subarachnoid and venous injections of normal horse serum. Alexander found that subarachnoid injections "produced precipitins in the blood in greater abundance, of higher titer, and persisting longer than those in control rabbits," which received intravenous injections of horse serum. The precipitins appear earlier after subarachnoid than after intravenous injections and repeated subarachnoid injections did not cause symptoms of anaphylaxis.

ANTISCORBUTIC POTENCY OF MILK POWDERS.—Aside from the variations in antiscorbutic properties of fresh milk (influenced by the feed), Hart, Steenbock and Ellis (*Jour. Bio. Chem.*, April, 1921, xlv, 309) found that milk powders vary in their potency, according to the method of their manufacture. Milk powdered by spraying into heated chambers contained less of the antiscorbutic vitamine than that made by desiccation on heated cylinders. While the authors do not condemn milk powders made by the spray process, they do wish to emphasize that when this milk is the sole diet of infants it is best to augment it by some source of antiscorbutic vitamine.

THE METABOLISM OF THE EUNUCH.—Read (*Jour. Bio. Chem.*, April, 1921, xlv, No. 2, 281) made metabolic studies of several eunuchs. Under ordinary conditions creatine in any appreciable amount does not occur in the urine of adult males. In males it generally disappears from the urine about the seventh year; while in females it is present up to puberty. At certain times creatine is found in the urine of women. In eunuchs, Read found that the metabolism approaches that of females and young males, in so far as creatine particularly is concerned. The earlier was castration done, the more likely is this to maintain. In those castrated after puberty and the development of secondary male characteristics, the metabolism approached that of ordinary males. Read says, "Hence one is led to conclude that removal of the male organs at a suitable age tends to develop chemically as well as physically secondary female characters in the individual."

DERMATOLOGY

Conducted by RALPH BERNSTEIN, M.D., F.A.C.P.

DANISH TREATMENT OF SCABIES.—The treatment of scabies with a new ointment, which is now in use in Denmark, has proven so superior to all other treatments that it is now universally used all over the country. One single innunction suffices; after twenty-four hours the scabies is cured and relapses are never seen. The cutaneous irritation is but slight. The treatment can very well be ambulant. The patient receives an ordinary cleansing bath, wipes himself thoroughly, and afterward rubs the entire body, except the head, carefully with the ointment, which is almost of the consistency of butter. The ointment must cover the entire cutaneous surface, but hard rubbing is neither required nor desirable. To give the ointment time to get into the skin the patient should wait for a quarter of an hour; after this he can go to bed. The next day, at about the same hour, he receives another bath and fresh underclothing and the cure is finished. Meanwhile, all his clothes have been disinfected. The necessity for this, however, is doubted by Lumholt. All statistics seem to prove this simple treatment is as absolutely reliable as it is comfortable for the patient. The preparation of the ointment is

a little complicated. One kg. of sublimated sulphur is dissolved at a gentle heat in 2 kg. of a 50 per cent. solution of potassium hydroxid. This makes a clear yellow solution. Two hundred and twenty-five gm. of petrolatum and 225 gm. of water-free lanolin are carefully mixed without heating. To this, 375 gm. of the solution of sulphur in potash lye mentioned above, is added. Fresh zinc hydroxid is prepared in mixing 28 gm. zinc sulphate and 40 gm. 20 per cent. sodium hydroxid and this is afterward added to the ointment. Liquid paraffin is added to obtain a total weight of 1,000 gm. Five gm. of benzaldehyd is added to check the somewhat disagreeable smell of sulphuretted hydrogen. The high sulphids of potassium are the capital element of the ointment on which its activity depends, a production of sulphuretted hydrogen taking place when the ointment is placed on the skin.—*Lancet, Lond.*

BURNS.—The good results in severe burns from normal horse serum, the hot air jet and phototherapy is commented on by Rozies, but the film method has won most adherents. The paraffin or wax mixture is in reach of every one. He has had good results also with a waxed tulle, which does not stick to the tissues. It is dipped in a mixture of petrolatum, wax, castor oil and balsam of Peru, with a melting point at 30 C. As early as 1904, Bernhard published his success in treating extensive burns with heliotherapy, and Aimes reported in 1913, the excellent results from it in a recent burn and in an old case in which the extensive burn of the third degree was healing only sluggishly, but it healed over smoothly under thirty-five sunbaths by the regular heliotherapy technic.—*Progres Medical, Paris.*

ELECTRIC TESTS OF SENSIBILITY OF THE SKIN.—Neri remarks, that although electric tests of the sensibility of the skin are not particularly instructive in normal conditions, in pathologic conditions they reveal characteristic changes of great importance for the diagnosis and progress of the case. He prefers the unipolar, Erb electrode; this reveals the differences between the two halves of the body, the sensation just below the sensation of pain, in examining organs and individual nerves, in connection with the conductivity of the nerve. He also emphasizes the possible medicolegal importance of the findings, confirming or refuting the subjective claims.—*Revue Neurologique, Paris.*

SODIUM GYNOCARDATE AND SODIUM MORRHUATE IN LEPROSY.—Muir has analyzed the results obtained from the use of sodium gynocardate and sodium morrhuate in the treatment of 300 cases of leprosy, 179 of which were of the anesthetic type, 81 of the mixed type and 40 of the nodular type. The dosage of both drugs varied from $\frac{1}{2}$ c.c. to 5 c.c. of a 3 per cent. solution, beginning with the smaller dose and gradually increasing to the larger. Injections of gynocardate were chiefly given intravenously, and the morrhuate was given hypodermically or intramuscularly, and in some cases intravenously. Of the patients treated with hydncarpate there was improvement in 132, and much improvement in 58. In several cases the lesions disappeared entirely. With sodium morrhuate no patients were recorded as being worse, 33 were not improved, 48 were slightly improved, and 36 were much improved. From this, it will be observed, that 71 per cent. showed some improvement, of which 31 per cent. showed great improvement. The opinion is that, the best results are obtained in anesthetic cases with sodium

gynocardate, but that the veins soon become blocked, and that sodium morrhuate has then to be resorted to as it can be given hypodermically and intramuscularly. In nodular leprosy morrhuate does not appear to be in any respect behind sodium gynocardate, and it has the advantage that it may be injected in small doses into the nodules where it acts locally on the bacilli, causing first a swelling of the nodule infiltrated and thereafter a shrinking and softening, while the local lymphatics become temporarily red and swollen.—*Indian Medical Gazette*.

MORRHUATE IN LEPROSY AND TUBERCULOSIS.—While Rogers reports having recently been giving an ethyl ester morrhuate in both leprosy and tuberculosis by the subcutaneous method with very little trouble to the patient and apparently distinctly favorable results, further experience will be necessary before the exact value of the new preparation can be decided.—*Journ. Amer. Med. Assn.*

GYNOCARDATE AND MORRHUATE IN LEPROSY.—The investigation made by Neve discloses that on an average treatment of six months, about one-half the patients appear to derive benefit from the gynocardate and morrhual treatment. Those not definitely improved appeared to remain stationary. Only about 10 per cent. showed fresh manifestations of the disease while under treatment, some of which were due to the freeing of toxins by overaction of the drug. Laryngeal and ocular leprosy requires great caution in the exhibition of these remedies.—*Journ. Amer. Med. Assn.*

ROENTGENOLOGY

Conducted by WALTER C. BARKER, M.D.

THE CAUSE OF SO-CALLED IDIOPATHIC HYDROCEPHALUS.—Walter E. Dandy, (*Johns Hopkins Hospital Bulletin*, March, 1921.)—The purpose of this paper is to present proof that the big group of hydrocephalus, not due to obstruction in the ventricular system, is due to obstruction between the ventricular system and the subarachnoid space. The paper describes very completely the experimental work, and is profusely illustrated.

A description of the circulation of the cerebro-spinal fluid is stated. The ventricular system is concerned only with the production of the fluid which is chiefly conducted away from the ventricles, into the cisterna magna, by three channels; which are the two foramina of Luschka and the foramen of Magendie. The cisternæ form a chain extending along the base of the brain, passing through the tentorium cerebelli, and ending in the cisterna interpeduncularis and cisterna chiasmatis. From these, the fluid is distributed through numerous ducts which subdivide and carry it into the subarachnoid space in the cerebral sulci. Here the fluid is taken up by osmosis, into the capillaries of the pia mater, and carried away by the general circulation. Four-fifths of the cerebrospinal fluid is absorbed in the cerebral sulci.

The author differentiates two forms of internal hydrocephalus. The first, as obstructive hydrocephalus, which is due to an obstruction in all three of the foramina; that is, the two foramina of Luschka and the foramen of Magendie, on to an obstruction of either the aqueduct of Sylvius, or the foramina of Monroe. The second type he calls communicating hydrocephalus, because one or all of the foramina of Luschka and Magendie are open,

and the obstruction is in the cisternæ or the major branches leading from them.

The proof of the cause of communicating hydrocephalus, was substantiated by producing this type of hydrocephalus experimentally in animals; also by the injection, intraspinaly, of India ink, to determine the point of obstruction, both experimentally into animals, and at post mortem in humans dying of hydrocephalus, and thirdly, in the living subject by intraspinal injection of air, and the making of a Roentgenogram of the head.

In the living, the most important diagnostic aid, is the cerebral pneumo-roentgenogram. It is made by removing a measured amount of cerebro-spinal fluid, from a spinal puncture, and introducing an equal amount of air. If there is no obstruction in the cisternæ or the major trunks, the air will outline the cisternæ and the cerebral sulci. The air in the sulci, will appear as streaks over the hemispheres. When obstruction of the cisternæ is present, the air introduced into the spinal canal, will pass as far as the point of obstruction, and then communicate with the ventricles through the distended foramina of Luschka and Magendie.

It will be necessary to inject air directly into the ventricles, when obstructive hydrocephalus is present, and also in some normal cases, so as to determine whether obstruction is present, and if so, its location.

The causes of communicating hydrocephalus met at operation and at autopsy, have been in the majority of cases due to adhesions resulting from meningitis, and also to developmental defects, tumors and cysts.

X-RAY PICTURES OF THE BONES IN THE DIAGNOSIS OF SYPHILIS IN THE FETUS AND IN YOUNG INFANTS.—P. S. SHIPLEY, J. W. PEARSON, A. A. WECH, (*Johns Hopkins Hospital Bulletin*, March, 1921.) draw attention to the well-known fact, that a negative Wassermann does not free the newly born child or infant under four months, from the suspicion of a luetic infection. Because of the frequency with which lues affect the skeleton during intra-uterine life, it is pointed out that a diagnosis may be made by observing the alterations in the affected bones, which is easy of recognition by the X-ray. The article is based upon the facts observed after making X-ray examination of three hundred white fetuses varying in age from six months intra-uterine, to nearly term, which were listed as normal in the Carnegie Institute of Embryology. Out of the first one hundred cases examined, forty-six showed either well marked or suspicious lesions, and twenty-five had luetic changes in the skeleton.

A minute description is given of the appearances of the structure of calcification in the formation of the fetal bones. The description of the appearance of the luetic bones is given; which may be summed up as an osteochondritis and epiphysitis, with an increase of lime salts at the epiphyseal line. Variations in the appearance of the calcification of the provisional cartilage are also described. From their experience the authors believe that the routine X-ray examination of the osseous system in the newly born child, will insure recognition of the hereditary lues before the clinical evidence is obtainable; and in this way, treatment may be instituted before the more serious lesions develop.

UROLOGY

Conducted by LEON T. ASHCRAFT, M.D.

RADIUM THERAPY OF CANCER OF THE BLADDER AND PROSTATE.—Gustav Kolischer (*American Journal of Surgery*), states that, while it is true that the character of the tumor is the most essential feature in furnishing or denying therapeutic success with radium, still it seems that the time and mode of application and the calling in of preparatory and additional measures are apt to influence the results obtained. It depends upon the filter employed to ward off the soft rays and permit only the hard ones to reach the organ or tumor in question. This fact explains that in some instances even at a remote date changes may occur produced by secondary rays also in organs quite distant from the tumor that was meant to be treated by the rays. Heavy zinc and lead filters have proven to be particularly prone to produce such untoward results, among which perforation of the bowel may be one of the most dangerous accidents.

Gold seems to be the best material for radium filters in bladder work for two reasons: On account of the high atomic weight of the metal the filtering capsule does not have to be very thick. In eight years' experience Kolischer has never had occasion to notice any remote or long distance damaging of pelvic or abdominal organs.

As to the time of radium application, he distinguished between primary application, raying following electrocoagulation of the tumor, and prophylaxis raying secondary to the excision of the growth. The time of the primary introduction of radium into the bladder will depend on the condition of the viscus. If there is no appreciable cystitis the radium may be inserted without any preparatory steps. But if pronounced cystic changes are present it is of great advantage to submit the bladder to some preliminary treatment. An inflamed bladder is rather intolerant toward the introduction of a foreign body. On the other hand, the radium will always produce a certain reaction inside of the viscus—if the cystitis is not cleared up previously to the insertion of the radium, it will be very hard to decide how much of the irritation and subsequent changes in the mucosa have to be blamed on the cystitis and how much on the radium.

In ammoniacal cystitis the urine should be acidified, at the same time trying to improve the local condition. The installation of small quantities pyoktanin solution, 1:5,000, gives good results. As soon as the urine is deodorized instillations of 10 per cent. iodoform-oil emulsion are employed. The radium therapy is started as soon as the cystitis is cleared up.

In cases of hemorrhage it will prove to advantage to irrigate the bladder several times with 1:1,000 nitrate of silver until the urine is cleared up.

Tumor cases with marked infiltrating cystitis are opened by the suprapubic route, which procedure answers two demands: The annoying strangury is relieved and the tumor is made more accessible to treatment preparatory to radium application. This preparatory treatment consists of electrocoagulation of the accessible parts of the growths. The surgical diathermy immediately does away with the hemorrhage and pain and furnishes incidentally another advantage—the stimulation of a malignant tumor observed occasionally under raying never occurs in instances of electrocoagulation previously accomplished.

The technique of radium application depends principally on the question, whether the bladder is open at the time of the intended radiotherapy or whether it is desired to insert the radium through the natural channels.

If a tumor is amenable at all to radium treatment it will respond by involution, even if only one part of it is exposed to the therapeutic rays. It becomes more and more probable that the curative success of radiotherapy is based on the production of defensive and protective ferments and not on any direct destructive action of the rays on the tumor cells. It is furthermore impossible to keep any foreign body close to and in permanent contact with any spot inside of a closed bladder. The apposition of a foreign body will always excite partial contractions of the bladder so that it will crawl from under any such pressing object.

For the placing of radium or similar substances into the unopened bladder Kolischer uses silver sounds the tip of which consists of a detachable hollow gold tip of three millimeter thickness into which the glass container carrying the radioactive substance is placed.

If the bladder is opened previous to the radium application the container and filtering capsule are dropped into the bladder through the suprapubic opening, a string or chain being attached to the capsule and fastened to the abdominal skin. In addition to the filter the mucous membrane has to be protected in such a way that even the gamma rays, where the radium is applied per rectum in the case of a prostatic tumor, will hit only this area that corresponds with the prostatic surface facing the anterior rectal wall. For this purpose a heavy lead cup is slipped over the filtering capsule. In this cap a little fenestra is cut; the container is then placed into the rectum in such a way that this opening lies against the prostate while the balance of the rectal ampulla is entirely screened off.

From experience, the writer feels justified in stating that the injection of proteids into the prostatic tissues seems to enhance the radium action in a decisive way. He uses proteus enzyme prepared by Kendall's method.

In a general way it may be said, that if a few radium treatments do not produce decided improvement, continuance is hopeless and we have to resort to electrocoagulation.

SEMINAL VESICULITIS.—Cunningham states it as his belief, (*International Journal of Surgery*) that the medical profession in general knows as little about the seminal vesicles as any organ in the body.

He emphasizes the fact, that the prostate and vesicles having become infected, remain so for long periods, because of the insufficient drainage afforded by the natural avenues. It is in this fact that remissions of urethral discharge and recurrent epididymitis find their explanation.

There is a group of patients from whom the infectious material cannot be removed from the seminal vesicles no matter how long appropriate palliative treatment is carried out, for the reason that certain infected areas cannot be kept sufficiently opened to drain through the natural channels. an explanation of which will be found by studying the anatomy of the seminal vesicles which shows their structure to be one of multiple branches and numerous diverticula. This group of patients to be made free from a urethral discharge or infection must have the vesicles removed or completely drained to effect a cure. In other words, it should be thoroughly appreciated, especially in view of the present campaign against venereal diseases, that there is

a group of male individuals with infected seminal vesicles and prostate whose only symptom is a persistent or intermittent urethral discharge. He thinks it is fair to say, that no attempt is made by most doctors who are willing to treat such patients to locate these lesions by making an examination of the anterior urethra, by a microscopical examination of the urethral discharge, by calibration of the anterior and posterior urethra for stricture, or to prove or disprove its presence by anterior endoscopy, and moreover to avail themselves of the knowledge of the condition of the prostate and seminal vesicles which may be gained by massage of these organs through the rectum, collecting the material so expressed and examining it microscopically, which is too seldom done. Unless one appreciates the methods of locating the lesions as just mentioned, the individual with a urethral discharge is usually treated by internal medication and anterior injections without benefit.

To carry the matter of treatment a step further, those who have much to do with venereal diseases recognize and employ the methods of diagnosis just referred to and treat the patient with seminal vesicle and prostatic infection by massage of these organs, thereby emptying them of the products of inflammation, following the massage by irrigations or instillations, giving careful directions regarding a non-irritating diet and the necessity for large ingestions of water. They realize further, that progress is slow, and months of time are necessary to effect a cure under the most appropriate treatment. They recognize further that recurrences of discharge are prone to occur even after all symptoms have been absent for months or even years. They also appreciate the fact, that there is a small group of patients with infection of the prostate and seminal vesicles who, no matter how long or intelligently treated, cannot be freed from the discharge of pus from the lesions located in these organs. It was for this group of patients that Dr. Belfield devised and practiced the procedure of irrigating the diseased seminal vesicle by opening the *vas deferens* through a scrotal incision and injecting an antiseptic solution up the vas and through the diseased seminal vesicle with the idea of cleansing and killing the infection within it. This procedure based upon a thoroughly sound conception has not proved to be all that may be desired, because it is seldom that a single injection produces a cure and repeated injections are not always possible, and further because the solution injected may not enter all the infected areas. That there are some patients cured by this method of treatment is unquestionable; but on the whole the results are not satisfactory. With these patients where failure results from this procedure, nothing short of thorough surgical drainage or the extirpation of the diseased organs will result in a cure.

Cunningham has found it necessary to perform such an operation, vesiculotomy or vesiculectomy, on forty patients who had received local treatments and after it is evident that a cure of the lesions cannot be attained by any measures other than their removal surgically. If the operation is undertaken under the circumstances indicating it, as just mentioned, the prostate should be drained also, for it has been definitely proved that an infection may be expected to coexist within it, to some degree at least, when the seminal vesicles are infected.

As a result of the operation the majority of patients are free from any urethral discharge before the operative wound is healed, and those who require any further treatment have been those patients with associated urethral mucous membrane changes, which lesions, whether dependent or inde-

pendent of the prostate and seminal vesicle infection, cannot be cured when constantly bathed in the products of inflammation from persisting disease in these organs.

INFILTRATION ANAESTHESIA OF THE INTERNAL VESICAL ORIFICE FOR THE REMOVAL OF MINOR OBSTRUCTIONS; PRESENTATION OF A PUNCH CAUTERY.—J. R. Caulk (*Jour. Urol.*, 1920). Caulk has devised an instrument similar to the Young punch. The outer sheath has no fang on the slot to hold it in position, as when the electric cautery is used the coagulation due to the burning maintains the instrument in place. The obturator sheath has at its terminus an iridioplatinum blade instead of a knife blade. This blade is about $\frac{1}{4}$ in. wide and of substantial thickness. Caulk tried several smaller blades but they proved entirely unsatisfactory, as they were too frail to withstand the pressure and the heat was imperfectly distributed. He had performed twenty punch operations with the blade described and it is still firm and in good condition. The blade is insulated from the main sheath of the instrument by mica plates. At the proximal end of the tube the current enters through a large contact point with a screw attachment, one pole being connected with the tube itself and the other with a large copper bar brazed to the surface of the tube and insulated with silk and mica. The cord which carries the current from the rheostat to the instrument is of large caliber and of practically the same size as the copper bar within the tube.

In order to burn tissue properly and prevent hemorrhage the procedure must be carried out slowly under low heat. Otherwise the process is about the same as when a cold knife is used. As the heat in the blade must be sufficient to burn the tissue without heating the shaft of the instrument, the conductors in the author's instrument have been made large and of uniform caliber throughout, so that they offer the minimum resistance to the current, which is thus brought directly to the cautery blade, the only point of increased resistance. In this way an intense heat may be maintained for a sufficient period of time without heating the instrument. The inner sheath serves as a handle for manipulating the instrument. The burning is done best by a slow rotary motion. This is easily regulated by using the handle as a lever. There is no irrigating attachment to the instrument since dilation of the orifice is unnecessary and there is much less danger of short circuiting in a dry field.

With the Young punch the operation can be done nicely under local urethral anesthesia induced with cocaine or novocaine for it is quickly over and the pain is tolerable. In an attempt to remove an obstruction with the cautery the procedure must be done slowly and a more profound anesthesia is necessary. However, as the operative risks must be reduced to the minimum, it is most desirable not to subject the patient to general or spinal anesthesia. Sacral anesthesia would be very effective for such operations, but this again falls into the category of major procedures. In observing the obstruction within the grasp of the instrument, it occurred to Caulk that it would be very simple to infiltrate the tissues of the orifice with novocaine through the outer sheath. Accordingly, he constructed a syringe somewhat on the order of the Geraghty utriclè syringe. This instrument has a pistol handle connected with a tube (about a No. 7, French) to the end of which is brazed an iridioplatinum needle. An ordinary Luer syringe is connected with the silver tube at its juncture with the handle of the instrument. With

this syringe the vesicle orifice may be easily infiltrated under the control of the eye. Caulk has used 1 per cent. novocaine.

ON THE STRICTURES OF THE MALE URETHRA.—A. Ravogli (*Am. J. Surg.*, 1920). After a detailed discussion of the anatomy of the male urethra the author states that, for the classification and description of strictures the urethra should be considered as having three portions, a prostatic, a membranous, and a spongy portion.

Strictures are either spasmodic or the result of inflammation. A spasmodic stricture is the contraction of the compressor urethrae seen in nervous persons or occurring after operation for hemorrhoids and is not permanent. Filiform bougies will increase the irritation, while a good-sized catheter will pass easily. Hot sits baths, opiates, and later dilatation to prevent recurrence are of value in the treatment. Silver nitrate 1:1,000 will decrease the sensitiveness.

The wide-caliber stricture of Otis consists of a contracting peri-urethral formation of fibrous tissues following the absorption of infiltration deposited in the submucous layer during inflammation. The lumen of the urethra is not narrowed. When the infiltration heals and scar tissue forms, narrowing of the lumen results.

In a series of 320 cases reported by Thompson, 54 strictures were between the meatus and a point $2\frac{1}{4}$ in. above it on the pars pendula; 51 were in the middle of the pars pendula; 216 were in the subpubic curvature in the bulb and the membranous urethra. Increased vascularity and the urethral curve favor the latter regions. The abundance of follicles in the bulbar region favor exudation. The membranous urethra favors traumatic stricture.

According to Thompson and Martin, gonorrhea causes from 75 to 85 per cent of all strictures. The others are traumatic.

A long-standing gleet, morning drop, shred, symptoms of posterior urethritis, irritable bladder, frequency, frequent erections at night, and impotence are present in various degrees. The urinary stream decreases in size and force and may be divided or twisted. Pain may be present, either at the beginning or the end of urination or may be spasmodic. Alcohol or excessive intercourse may cause retention. Urethral dilatation, extravasation, abscesses, fistulae, cystitis, ureteritis, and pyelonephritis are possible complications.

The prognosis depends upon the nature and location of the stricture. Traumatic strictures contract rapidly, while gonorrheal strictures contract slowly. Those in the perineal urethra are more difficult to treat than those in the pars pendula. A first-stage stricture is more easily dilated and more permanently cured than a second-stage stricture. Death may follow extravasation, abscess and gangrene formation, chronic uremia, cachexia, etc.

The treatment consists of gentle and clean instrumentation. Dilatation should be gradual and accompanied by gentle massage. The author relies more upon sounds than upon a dilator. In tight, resisting strictures filiform bougies, soft rubber bougies, and electrolysis are used instead of steel sounds which may cause damage by tearing. Radium has been employed by Ayres with poor results. Cutting gives only temporary relief. External urethrotomy is indicated in impassable strictures. Instrumentation is followed by irrigation. Internal antiseptics are of value.

THE TREATMENT OF PYELITIS IN INFANCY AND CHILDHOOD.—H. L. Kretschmar and H. F. Holmhols, (*J. Am. M. Assoc.*, 1920). The authors report the results of treatment by pelvic lavage with silver nitrate in 11 cases of pyelitis in infants and children.

Cystoscopy can be performed in infants as easily as in adults. The authors quote Nitze and Hyman on cystoscopy and urethral catheterisation in children. In boys, because of anatomical considerations, cystoscopy and urethral catheterization cannot be carried out as easily as in girls. The authors performed cystoscopy repeatedly, however, on boy babies 14 months of age.

The value of a routine Roentgen-ray examination cannot be over-emphasized. In this way, several cases of so-called pyelitis were proved to be cases of stone in the pelvis with infection. Doubtless in some of the cases diagnosed as pyelitis in which pelvic lavage fails to produce a cure the failure is due to the presence of calculi, tuberculosis of the kidney, or stricture of the ureter.

In order that renal tuberculosis might not be overlooked, routine examinations for tubercle bacilli were made, including guinea-pig inoculations with urine obtained from each kidney and bladder. In this series no evidence of renal tuberculosis was found.

The youngest patient treated was 7 months of age; the oldest, 10½ years old. All of them were girls.

There were no untoward results or reactions following instrumentation and treatment.

It was the object in treating this series of cases to render the urine free from pus and sterile. In other words, no case was considered as cured in which these requirements were not fulfilled. Symptomatic cures were not considered.

In 9 of the 11 cases complete cures were obtained; that is, at the time the patients were discharged as cured, the urine was free from pus and the cultures were sterile.

The cultures were reported sterile if no growths were found at the end of forty-eight hours. In order that the possible presence of slow-growing organisms might not be overlooked, however, the plates were kept in the incubator for five days before a final report was given. Accordingly it may be stated, that in every case in which specimens were obtained the cultures remained sterile at the end of the fifth day of incubation.

Silver nitrate solution was used in each case. The strength of the solution used was 0.5 per cent. The amount injected varied from 1 c.cm. in the cases of infants to 5 c.cm. in the cases of older children.

The number of injections necessary to render the urine sterile varied. Three patients required but one injection, 5 required two injections, and 1 required three.

In 2 cases the urine from the kidney became sterile before that of the bladder, in one case after two injections and in the other after the first injection. A subsequent examination one week later demonstrated that the kidneys were again infected. In treating adults this observation had been made several times. In some of the cases in which it was noted there were recurrences of the pyelitis. The fact therefore seems to be of sufficient importance to warrant emphasis for if the kidneys show sterile specimens and the bladder still harbors infection, the bladder may be a cause of subsequent recurrence. In an article on cystography by Kretschmar it was shown that

fluid may regurgitate from the bladder up the ureter into the kidney pelvis. This phenomenon was noted in infants and children as well as in adults in a series of both normal and pathologic bladders.

Two cases in the author's series showed regurgitation of bladder fluid into the renal pelvis.

In ten of the eleven cases the colon bacillus was found in pure culture. One patient had a paratyphoid bacillus infection.

In all the cases the pyelitis was bilateral.

Routine leucocyte counts were made on each specimen of urine. This method gives a more accurate estimation of the amount of pus present in the urine than the indefinite terms now in use.

The article is summarized as follows:

1. Pelvic lavage with solutions of silver nitrate is a procedure which may be carried out in cases of infants and children.

2. This mode of treatment has rendered the urine sterile and free from pus in 9 of 11 cases.

3. There have been no complications or unfavorable results following this treatment.

4. All of the cases treated in this manner had resisted all other forms of treatment.

For a complete record of the leucocyte count and cultures the reader is referred to the original article.

SURGERY

Conducted by J. D. ELLIOTT, M.D.

A PERINEAL OPERATION FOR REMOVAL OF STONE IN THE LOWER END OF THE MALE URETER.—Lowsley reports the successful removal of a calculus from the lower end of the ureter by an incision through perineum. The points he wishes to make are well summed up as follows: 1. No conclusions can be drawn from a single case. The lesson taught by this particular case seems to be that removal of stone by the perineal route should not be attempted if (a) the stone is more than 4 centimeters from the bladder; and (b) it is not fixed in its position. 2. Stone impacted at the point where ureter joins the bladder wall is accessible per perineum unless the patient is obese. 3. Provided a stone is successfully removed from the ureter by the perineal route that patient may be allowed out of bed after the second day and the downhill drainage would seem to be a decided advantage in that the chances of thick scar formation around the ureter are less.

The advantages of the operation are:

(a) This portion of the ureter is more accessible per perineum than by any abdominal operation. (b) The patient may be allowed out of bed two days after operation. (c) The downhill drainage from the incised ureter prevents absorption of urine and deleterious results from concomitant infection which frequently accompanies urinary lithiasis. (d) Chances of wide infection of tissues around incision in ureter and subsequent stricture of ureter are much less.—*Surg. Gyn. and Obstet.*, April, 1921.

VESICOSIGMOIDAL FISTULAE: Vesicosigmoidal fistulae are comparatively infrequent, so Sutton has carefully covered the findings and results in 34 operative cases. He finds: 1. The bladder mucosa may be normal in the presence of a vesicosigmoidal fistulae. 2. Vesicosigmoidal fistulae are far more

commonly the result of infective or inflammatory causes than the result of malignancy; probably the most frequent cause is inflammatory disease of the uterine adnexa and next in frequency is sigmoidal diverticulitis. 3. Stricture or stenosis of the rectum or the sigmoid below the fistulous opening tends to increase the size of the fistula; it may also be one of the factors in the development of acquired diverticula of the sigmoid. 4. Mild cystitis or local areas of cystitis around a fistulous opening with intervening normal bladder mucosa are common symptoms. 5. The symptoms from vesicosigmoidal fistulae existed in the majority of the 34 patients for nearly 1 year or more prior to operation. Two had symptoms for 10 years with only mild diffuse cystitis, while those with marked cystitis had had symptoms for about 1 year. 6. Ascending ureteropyelonephritis is not usually associated with vesicosigmoidal fistula. 7. Vesicosigmoidal fistulae may heal spontaneously, if of infective or inflammatory origin. 8. Subsequent to an operation for vesicosigmoidal fistula due to a diverticulitis of the sigmoid, a newly acquired diverticulum may form in which a diverticulitis may develop and produce a second vesicosigmoidal fistula. Such a predisposition to the development of acquired diverticula and their ultimate results may be overcome by a resection of the sigmoid of the Mikulicz type in which tissue of suspicious cancerous appearance is also removed. 9. A large rectal tube is a very useful aid in the closure of the sigmoid; it should be passed up beyond the closure and thus relieve an unnecessary strain that might be exerted upon the anastomosis. 10. Operative results show cure in 67.64 per cent. of the patients and improvement in 17.64 per cent. more. Contrary to the opinion frequently expressed, the operative results in the presence of local tuberculous infection were good. 11. In 32.35 per cent. of the cases cured of vesical fistula a fecal fistula remained which gradually healed within 15 days to 3 years and 3 months, and in only 2 of these cases was there a frank recurrence of all the symptoms which were cured or improved at the second operation. 12. The operative mortality is low (11.76 per cent.) 13. Any reasonable attempt to improve the condition of these patients is advisable.—*Surg. Gyn. and Obs.*, April, 1921.

ACIDOSIS IN OPERATIVE SURGERY.—Farrar reaches the following conclusions as to acidosis after careful experimentation and study of this interesting subject: Acidosis is a term used to signify an impoverishment of the body in bases and the alkali reserve (bicarbonates of the blood) is the criterion of the acid-base balance of the body. The determination of the alkali reserve (*i. e.* the number of cubic centimeters of carbon dioxide gas which 100 cubic centimeters of blood plasma will take up) is readily made by Van Slyke's method. As the range is shorter in women the danger line is sooner reached, which accounts for the greater frequency of acidosis following operations in women than in men. The fall in alkali reserve during operation depends not only upon the anesthetic and the duration of the operation, but upon the nature of the operation and occurrence of hemorrhage and shock and bears a close relation to the fall in blood pressure and pulse pressure. If the fall in blood pressure is prevented, there is a saving in alkali reserve. A solution of glucose given intravenously during an operation at the rate of 0.8 grams of glucose for every kilogram of body weight each hour of the operation will lessen the acidosis incident to operation by promoting metabolism, prevent or diminish the vomiting, and promote diuresis. Glucose will appear

in the urine in one-half hour if the rate has been exceeded. A solution of gum acacia (6 per cent.) in glucose (20 per cent.) if given at a sub-tolerant rate the entire time of operation, is an aid to the maintenance of blood pressure. Carbohydrate feeding before and after the operation together with the use of bicarbonate of soda will do much to prevent or lessen acidosis. *Surg. Gyn. and Obs.*, April, 1921.

DRAINAGE OF THE COMMON BILE DUCT THROUGH THE CYSTIC DUCT; CYSTO-CHOLEDOCHOSTOMY.—The common duct has occasionally been drained through the cystic duct, but Reid makes a plea for suturing the wound in the common duct when it has been opened, and draining the latter by a tube through the cystic duct. He reports four operations performed in this manner by Halstead and himself with gratifying results to the patient's comfort, rapid improvement and quick healing of the abdominal wound.

The procedure is performed by isolating the cystic duct after all calculi have been removed. The cystic artery is ligated and the duct is then dilated, when necessary, so that a catheter, 12-16 F., can be passed through and anchored in it. The wound in the common duct is closed and drains are placed down to the opening in the cystic duct. The drains are removed in 2 to 3 days and the catheter is removed after occlusion of it by clamping for several hours gives rise to no symptoms, usually in 7 to 10 days. Leakage about the tube has not occurred and practically no discharge of bile follows its removal.—*Annals of Surgery*, April, 1921.

OPHTHALMOLOGY

Conducted by WM. M. HILLEGAS, M.D.

GLIOMA OF THE RETINA.—Schoenberg reports a case of bilateral glioma of the retina apparently arrested in the non-enucleated eye by radium treatment. The author enucleated the left eye of a child, aged 2 years, with clinical evidence of glioma, which was subsequently confirmed microscopically. While the child was under the influence of the anæsthetic the right eye was examined. A sharply circumscribed grayish white tumor was found limited above and below by branches of the retinal artery, occupying an area a little larger than a quadrant of the eyeground, extending from the margin of the disk nasally and below, towards the periphery, but not reaching the latter. This area was surrounded on all sides by patches of choroidal atrophy with pigmented borders. Three treatments with radium were given at intervals of several months by Janeway. At the last examination, three years later, the impression is gained that all that was left of the glioma is a degenerated necrosed mass.

The patient presented a number of features worth pointing out: (1) The length of time under observation (over three years). (2) The microscopic evidence as to the correctness of diagnosis. (3) The chorioretinal patches surrounding the growth. (4) The lenticular changes during the treatment. (5) The good general condition, and the absence of increase of tension three years after the glioma had been discovered and treated. (6) The apparent arrest, recession and degeneration of the gliomatous masses.—*Ophthalm. Literature*, December, 1920.

WAR BLINDS.—The psychic condition of the war blind constitutes an extremely important factor in their rehabilitation. Wholey discusses it on the basis of his experience at Hospital No. 7, "Evergreen," where he studied 115 cases. Of these, 42 were concussion cases, the loss of the eyes in all but 5 being due to high explosives. In a few there was evidence of damage to the central nervous system, leading to progressive deterioration. But of all the cases only 2 presented symptoms of major hysteria, and neither of these men had been injured in battle, and both had shown symptoms of hysteria before becoming blind. He believes that with the instant blunting of consciousness, shown by absence of pain, simultaneous with the blinding, it was impossible for the mechanisms necessary for the acute onset of hysteria to come into play.

The attitude of the blinded man toward the study of Braille has diagnostic value, although in some cases inopportune, early urging to study it, seemed responsible for an extreme dislike and inability to take it up. Wholey observed no type of mental reaction that may be regarded as peculiar to the blind. A great factor in sustaining their morale and attitude of cheerfulness was in being associated with those similarly afflicted in a big common experience. Men placed apart from other blinded soldiers had been lonely, unhappy and unable to adjust themselves to their handicap. It happened almost uniformly that the men were eager to return to the life at the hospital after they had been home on furlough. The discipline of military life also seemed of great value.—*The Journal of American Medical Association*, Vol. 73, p. 1568.

THE EFFECTS OF CARBON MONOXID UPON THE EYE.—After a general survey of the subject and a graphic description of the general subjective and nutritional effects of the carbon monoxid poisoning, Dr. W. H. Wilmer, of Washington, D. C., concludes as follows: The exposure in modern life to the influence of carbon monoxid introduces an additional cause of eye lesions. As carbon monoxid is present in all the gases connected with domestic and industrial activities, possibly it has been responsible for certain obscure amblyopias that have been attributed to other chemical substances. Its causal relation may be obscured at times by some other very evident source of toxemia, such as septic tonsils, apical abscesses, syphilis, etc.

It is not of vital importance to the ophthalmologist whether carbon monoxid manifests its serious effects as a distant chemic poison, or whether it deals destruction purely by its power of quickly depriving the blood of its essential oxygen-carrying power.

Carbon monoxid does not show any great predilection for the optic nerve fibers as a whole, nor even for the very sensitive papillomacular bundle which is so markedly affected by alcohol, nicotine, etc. The ocular nerve lesions seem to be due to changes in the delicate structures of the nuclei of origin of these nerves.

However, through its effect upon the sensitive fabric of the central nervous system, carbon monoxid does cause ocular paralysis, hemianopsia, disturbances of pupillary reactions, optic neuritis, and, actually, optic atrophy. Like pure asphyxiation, it is the source of great ocular congestion; and in this way it does cause subconjunctival and retinal hemorrhages; while in the milder cases of carbon monoxid poisoning congestion of the respective cerebral centers causes hallucinations of vision, hearing and touch.

The treatment seems to resolve itself into remedies suggested by the

symptoms, prophylaxis, hygiene, and the legislation that should follow the proper education of the public in regard to the insidious toxicity of this "Frankenstein" of advanced civilization.—*Amer. Jour. Ophthal.*, February, 1921.

SYMPATHETIC OPHTHALMIA.—Dimmer, in a comprehensive summary speaks of his own experience in the Austrian army, and draws conclusions from the published reports of other observers. Gross, in 576 severe ocular injuries, many causing blindness in both eyes, saw no case of sympathetic disease. Neither Uthoff nor Oleynik observed a case. Sachs and Birch-Hirschfeld each cite one case. The statistics of the Franco-Prussian war are commented upon, and Dimmer doubts the accuracy of diagnosis in many of the ninety-nine cases in the German army during that period. He, therefore, infers that sympathetic disease was a very rare condition in that and in this past war. Reviewing the war injuries of his clinic, with reference to the time that had elapsed between the injury and the enucleation, he found the following: The total number of enucleations was 142, including cases enucleated elsewhere which came to the clinic for examination. In all of these cases the date of the injury could not be obtained, so that the interval between the injury and the enucleation was ascertained in 131. Of these 22 were enucleated within the first two weeks after injury; 46 cases, 2 to 4 weeks; 24 cases, 4 to 8 weeks; 20 cases, 6 to 8 weeks; and 19 cases, still later than 8 weeks. This shows that in a very large number of cases (83.2 per cent.) enucleation was resorted to later than absolute protection against sympathetic ophthalmia is to be expected. He believes the early enucleation and the general healthy condition of the patient may be possible reasons for the good reports.

It is to be noted that Schirmer has shown that sympathetic ophthalmia generally appears within the first year after the injury, and usually after the fourth week, most frequently between the sixth and the twelfth week after the injury. If it could be shown in a very large number of war injuries that sympathetic ophthalmia was observed almost without exception when the injured eye was removed relatively late, i. e., after the sixth week, and if the number of sympathetic ophthalmias is about the same as that which we ordinarily find after injuries or eye diseases which are prone to cause it, we would have to conclude that the marked reduction in the number of sympathetic ophthalmias in war injuries is due to timely enucleation, a fact that would deserve the widest publication.

If the rare occurrence of sympathetic ophthalmia in war injuries is not due to the early enucleation, but to internal causes, then an explanation of this fact would have to be looked for. There may be a certain predisposition on the part of some individuals, poorly nourished patients and lymphatic children are prone to the disease. Changes in the blood were reported by Ormond and later verified by others.

If internal causes are to be accepted as a reason for the rare occurrence of sympathetic ophthalmia with war injuries, the physical fitness of the soldier deserves consideration; also whether or not some general condition, overlooked at the time of medical examination, or which developed later in the course of the war, could be responsible in those cases which did acquire sympathetic ophthalmia.—*Amer. Jour. of Ophthal.*, Vol. 2, p. 294.

THE HAHNEMANNIAN MONTHLY.

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THE NECESSITY OF ADEQUATE DIAGNOSIS BEFORE INSTITUTING THERAPEUTIC PROCEDURE IN GASTRO-INTESTINAL CASES.

BY

ROY UPHAM, M.D., F.A.C.S., BROOKLYN, N. Y.

(Read before the Clinico-Pathological Society, Philadelphia, Pa., May 15th, 1921.)

JUST as the pendulum sways from side to side, so has the therapeusis of gastro-intestinal diseases swayed from the side of exclusive medicine to the side of exclusive surgery, and if we can review the present era, it can be said that we are at the stage where the farthest point of oscillation has been reached on the surgical side and the force of gravity of good judgment is attracting treatment from the extreme side of surgical radicalism to the middle point of balance where the proper selection of our cases by means of adequate diagnosis will result in the point of precise poise.

The literature of twenty years ago abounded in the medical treatment of practically all forms of gastro-intestinal disease and with the work of the surgeon in solving the appendicitis problem came the enthusiasm which was followed by the birth of gall-bladder surgery, following which ensued the period marked by the free use of gastro-enterostomy in the treatment of all forms of gastric distress. It is possible that many were of the belief that the application of this measure was only for ulcer of the stomach, but many cases were subjected to gastro-enterostomy where it was not indicated. However, it did not take long before the profession recognized the uselessness and absolute danger of doing a gastro-enterostomy

on a stomach which was no further diseased than that of atony, or so-called ptosis, which, in the vast majority of cases, is nothing more or less than atonic elongation.

It is a strange fact that after the era of brilliancy marked by reports from both the purely medical man and the purely surgical visualist of the results procured from the indiscriminate use of either one of these methods of treatment there has resulted practically the same percentage of cures following the use of each method of treatment, and the writer feels that if there were any advantage in the two methods it is on the side of medicine, because with the use of medical treatment there was no mortality, whereas, on the other hand, gastro-enterostomy and gastrectomy, especially the latter, have not been entirely devoid of fatal results. The criticism in answer to this from the surgical wing of the profession would be that many cases which have received indiscriminate medical treatment have passed from the operative cancer stage into the inoperable cancer stage, and thus medical treatment in such cases certainly had its mortality.

The writer recognizes this point and also a number of other similar points of contention which shall be touched upon in the paper and will make no effort to make a path of retreat because he trusts that the discussion of this subject which will follow will be such that there will be no attempt at the entire elimination of the points of contention in the paper, and it is hoped that it will provoke discussion and that the main value of the evening will emerge from that quarter.

It would, therefore, seem that at the present time we are at the point in the consideration of gastro-enterological subjects where we are ready to assimilate the large amount of data which has been collected upon the various conditions, and having before you therapeutic measures for their relief, it is hoped that it will be recognized that the success of the therapeutic application depends upon adequate diagnosis of the condition prior to the institution of treatment.

During the past six years surgical progress has been revolutionized through the efforts of a mighty organization having its center of power in the Middle West, and higher standards of surgical training have been insisted upon; and at the present time the standardization of hospitals is occupying considerable attention at the hands of this organization. But to one who has visited the large clinics from San Francisco to

Berlin, it would seem that the step which is vitally necessary at the present time for the protection of the patient is that adequate efforts be taken and methods be employed to secure proper diagnosis in order that useless and improper medical efforts and surgical measures may be avoided.

The title selected for this paper was presented as a means of quieting the frequent pleading of your new and most energetic President and to cease his annoyance, but in the quiet afterthought of the subject it dawned upon the writer that the broadness of the title is such that it renders adequate consideration of the subject far beyond one's ability to cover it in the short space of time at one's disposal this evening. Therefore, a brief analysis of the methods which are available as aids for the general practitioner and their relative value will be the extent to which the writer will touch in a consideration of this subject.

There has probably been no single aid which has advanced as has the radiograph in the diagnosis of gastro-intestinal conditions, and in making this assertion the writer is not unmindful of the studies which have been made in gastric chemistry, and due to its spectacular and evident appeal to the physician, the radiograph has come to be relied upon as a final and absolute source of diagnosis. The result of this has been that the dogmatic claims of the radiologist, in the diagnosis of gastric conditions have been made upon insufficient studies of these cases, by which is meant that they have been viewed simply from the standpoint of the radiograph without due consideration of all the aids in diagnosis which are at our disposal. This has resulted in the employment of erroneous therapeutic measures with disastrous results, not only to the physical welfare of the patient, but also to the reputation of the physician. My plea, therefore, is that the radiograph in such conditions as perforating gastric ulcers, certain varieties of duodenal ulcer and visible gall-stones, as a means of diagnosis is of itself sufficient, but there are, on the other hand, many conditions in which the radiograph should be considered as merely one method of investigation and negative radiographic findings, or even those of a most positive nature, should not be accepted *per se* as final, but should be considered in conjunction with investigation along lines suggested in this paper.

The method of fractional examination of the gastric contents, while one which is not available to the general practi-

tioner himself, is a method which warrants the most careful consideration at the hands of his pathologist, for many diagnoses, of which one shall be cited, may be established in this way, as an aid following radiographic examination. As an example, let us say that a report has been received from the pathologist that there is a defect in the duodenum which has all the indications of a duodenal ulcer. A fractional examination of the gastric contents is then made and a delay found in the rise of the curve in the first hour and a curve far below normal in the second hour. This in itself rules out duodenal ulcer and renders absolutely impossible such a diagnosis; and on the findings disclosed by the fractional examination the physician would be led to assume that he is dealing in this particular case with reflex spasms coming from the gall-bladder, appendix and colon. Before dismissing the aid which can be acquired from gastric chemistry, the great aid which the motor meal gives in determining conditions of gastric emptying power must be emphasized. Six prunes and six raisins are taken the night before, upon retiring, and the stomach is investigated the following morning. On washing out the stomach remnants of the prunes and raisins are found, and a diagnosis of pyloric obstruction can be absolutely established, in which event the case emerges at once from the field of medicine into that of a distinctly surgical case. Thus is apparent the value of the motor meal and the fractional analysis of the gastric contents, and having established by means of the fractional examination the fact that the difficulty is not in the duodenum, investigation of the gall-bladder by means of a tube passed into the duodenum and the injection of magnesium sulphate, followed by relaxation of the sphincter of Oddi and the contraction of the gall-bladder, we have placed before us absolute and accurate knowledge of the condition of the gall-bladder.

To Dr. Lyons, of Jefferson Medical College, Philadelphia, we owe the perfection of this method, and from our investigation of a large series of cases of gall-bladder drainage which have been done in our office in the past three months, we can confidently state that this method of investigation will bear the closest analysis, and the writer is of the opinion that nothing which has so far been presented has in any way rivalled it in giving accurate information as to the contents of the gall-bladder and the study of the pathology present in that

organ. In this connection it is worthy of note that in a recent paper in the *Journal of the American Medical Association* by Dr. Dudley Roberts, he reports that only some 15 or 20 per cent. of cases of gall-bladder disease are accurately diagnosed by means of the radiograph. This confutes the enthusiastic reports of George, of Boston, who claims to be able to diagnose at least 95 per cent. of cases of gall-bladder disease by means of the radiograph. I thoroughly agree with Roberts in the view that George is over-enthusiastic in his claims and that it is impossible to obtain such a degree of success in diagnosis by this means as George claims, and from his experience with an extensive series of cases the writer doubts if the radiograph is of positive value in more than 33 per cent. of cases examined by this means, and believes that by intraduodenal drainage of the gall-bladder with the tube it is possible to diagnose at least 95 per cent. of gall-bladder lesions.

This brings us to an interesting observation, namely, that it is impossible at the time of operation to state positively, judging by the external appearance of the gall-bladder just what the pathology within it is. This view has been borne out by a number of cases this fall in which the abdomen was opened and apparently the gall-bladder appeared normal, with no thickening of the lumen, and yet by use of the method of gall-bladder drainage as heretofore, the diseased condition of pathological bile was disclosed; and the writer is convinced that early stages of gall-bladder infection can be diagnosed by this method with almost 100 per cent. of accuracy, and he believes that it behooves all present to become familiar with this method of investigation and treatment, for the reason that in this way early cases of infection of the gall-bladder can be treated and disease of the ducts, such as ordinary catarrhal jaundice, can be relieved in from fourteen to seventeen days, whereas previously the patient would go about in a jaundiced condition for from six to seven weeks. By recognition of the fact that the infection with exfoliation of the cells of the lining membrane of the gall-bladder is the earliest stage of gall-bladder disease, if the gall-bladder can be drained at this period, the infection may be eliminated. In this way we shall make the greatest advance in the prevention of gall-stones that has yet been drawn to the attention of the profession.

While on this subject of gall-bladder disease there are two types of acute disease which should be borne in mind, and

the writer wishes to present the point and to go on record that there is acute infection of the gall-bladder from septic absorption following pregnancy. It has been repeatedly shown that pregnant women are more prone to gall-bladder disease than those who have never borne children, and the author believes this is something which has either never been brought forth or has escaped attention, and he wishes to present the point that in pregnancy there is septic absorption from the normal endometrium following child-birth with extension of the infection into the gall-bladder which sets up a mild cholecystitis, being in many cases unrecognizable, and it is only in few cases that it is recognized; and this cholecystitis is the foundation of the infection which later gives rise to gall-stones in women who have passed through pregnancy. The writer is absolutely assured of the truth of this assertion and earnestly requests those who handle this type of cases to watch, particularly in the ensuing year, for the mild infections of the gall-bladder following their cases of pregnancy.

That this infection is not limited alone to the gall-bladder has been proved by two cases of cholecystitis which have been recently under the care of the writer out of a large number of cases with septic teeth, and by stepping in at this period and draining the septic contents of the gall-bladder it serves to prevent future operations and prolonged periods of ill health or invalidism.

Examination of a portion of the stool for occult blood, using the benzidin test as a routine, is a method which does not consume as much time as an office urinary analysis, and from which much benefit can be secured by the general practitioner, the patient, of course, being on a meat-free diet previous to the test; and permit me to suggest that in your next case of troublesome "indigestion" that you employ this method of testing stools for occult blood, and finding it, do not fail to bring to your assistance all measures possible in order to render an accurate diagnosis, for in the presence of occult blood in the stools the patient is in need of most careful attention.

Permit me also to emphasize one or two points in the physical examination in an effort to arrive at a gastro-intestinal diagnosis. Do not fail to locate the pupillary reactions, and do not allow a gastric crisis for beginning locomotor pass unnoticed. Every case should be investigated for septic mouth and septic tonsils. Coming down the neck look for an enlarged

thyroid, and suggest the use of thyroid feeding to determine if there be excessive thyroid sensibility (Welch test), and utilize the practical application of the Goetsch epinephrin test, and, further, the enlarged gland of Virchow underneath the left sterno-cleidomastoid should not be overlooked. Passing down over the abdomen, a nodular mass at the navel. One should also examine the lower border of the liver as another possible source of intra-abdominal malignancy. And do not pass the inguinal and femoral rings as the only source of possible hernia, as a ventral or umbilical hernia may give rise to very confusing gastric symptoms. And last, but not least, make it a routine practice to examine by means of the protoscope and the finger the rectum of every case which comes under your observation, for in many obscure cases a protracted diarrhea is but the first symptom of malignant involvement of the recto-sigmoidal junction, which is readily diagnosable by means of the palpating finger; and if there is any condition of abdominal malignancy that is more hopeless than malignancy at this point we do not know it. The routine office examination of every rectum would be the factor by which this condition would be disclosed in its earliest inception, at which period it could be entirely eliminated by the use of radium and the eradication of cancer of the rectum lies in the careful examination with the gloved indexed finger of the practitioner.

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CONSERVATION OF HEARING.

BY

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(Read before the Homœopathic Medical Society of Pennsylvania, Sept., 1920.)

IN these days of advanced medical learning when so much is written upon conservation, it seems fitting that a few expressions of thought concerning the conservation of hearing would not be amiss. If such suggestions stimulate a little more interest in the ear and its hearing function they will have served their purpose.

The family physician is the purveyor of medical knowledge and advice. He acquires much of his information of special subjects, largely from the fruits of the endeavors of

those who devote their time exclusively to special subjects. To the family physician the majority of individuals go when they develop ear symptoms. It is the advice given by the family doctor that is usually followed. Our experience in special work has led us to classify the general practicing profession into three classes in so far as the ear is concerned. The first class will not touch the ear, they claim they know nothing about it and will not attempt any therapy, but prefer to send their ear cases to one who practices this specialty. Patients under the care of such physicians are less liable to be maltreated.

The second class are those who attempt to treat the more common simple aural conditions; who recognize quickly their limitations and refer their more complex cases to the specialist. These men are quite safe and their patients not endangered so long as the man continues to recognize his limitations.

The third class is made up of men who, with a very hazy and superficial knowledge of the ear, attempt to treat anything that comes to their notice. These men bring discredit upon the profession and much dissatisfaction on the part of the laity with otology and otologists in general.

A fourth class may well be added, and this purposely left to the last because of our desire to emphasize it and that is the class of men who have a woeful disregard for the ear. They pass it over with utter disregard, instructing the patients that their symptoms will disappear without any attention, and that it is a mistake to interfere with the ear. Patients are still being instructed in the use of Valsalva's inflation for the relief of aural discomfort—a most damaging procedure. All sorts of oils and irritating applications are introduced into the canals for the relief of ear pain or other symptoms. These unscientific methods of the profession have been handed down in some instances for centuries.

The laity have hitherto had their own mistaken ideas concerning things medical; many of them the evolution of ideas dating back to the dark ages. The ear has not escaped their illogical preconceived notions. Early investigators established a very clear conception of the anatomy and physiology of the ear but the therapeutics was seeped in the mire of superstition and mysticism. This lack of definiteness in treatment has led the laity to implicitly believe that once the ear becomes

the seat of disease it is useless to try for a cure. And unfortunately how true this is at times. It is a regrettable fact that so many cases of ear disease that come to us cannot be corrected. In a large percentage of cases this unfortunate stage has been allowed to become present through the carelessness of the patient or to the poor medical advice, or to meddling treatment. The idea that dull hearing cannot be helped had kept many an individual from consulting a specialist in the early days of his affliction when something could have been done.

The future hearing of the nation is in the hands of the family physicians. It is they who must recognize early the conditions in the upper respiratory tract of the very young children which predispose to dull hearing. It is the general practitioners who see the children through their recurring colds, their measles, scarlet fever and tonsil infections. They are the ones who direct the hygiene during the dentition and who can early direct the parents as to the necessity of overcoming malforming palates and mal-occlusion of the teeth. All these conditions have a direct and distinct bearing upon the production of aural pathology and the production of dull hearing.

In cases of lues it is important that the general practitioner who treats such cases watch, or cause to have watched, the ears of luetics for here is a most potent cause of the destruction of hearing and too often totally disconnected in the minds of the medical attendant with the lues. Furthermore the medical attendant must be on the watch for dull hearing in luetic parents. Hereditary lues is a very common cause of deafness in the young and, we who practice otology, have all seen cases where the little tots have been operated for the removal of tonsils and adenoids when a Wassermann would have directed the therapy correctly.

In the case where persons are employed in places of excessive noise the hearing apparatus should be carefully investigated frequently for the advent of symptoms of degeneration. By carefully manipulating their work or getting them out of the environment entirely the hearing may be saved.

In the mother of child-bearing age who presents the symptom of dull hearing, it should be the duty of the family physician or the obstetrician to seek council with the otologist as to the influence the pregnancy will have upon the aural function. It is a well known fact clinically that certain types of dull hearing are made materially worse by child-bearing. This

is a serious problem for most careful consideration, and one which we know has not been seriously considered.

The conservation of hearing means that the medical profession must ever be alert to detect in their patients conditions which predispose to aural pathology. When there is a general acceptance and practice of this fact, and when the physicians in general correct the already well grounded mistaken ideas concerning the ear, then will we place otology on a practical fruitful basis. It has been our experience that patients are eager to learn new things about their bodies and its functions. Properly explained, new and correct ideas quickly supersede the old unscientific and harmful notions. The ear offers a large field for this corrective work.

The laity in general should be taught:

(1) That earache is a symptom of serious import no matter how short its duration and that such an ear should be subjected to the careful scrutiny of a trained eye.

(2) That discharging ears are a menace to life.

(3) That head noises are a signal of ear trouble deserving of undelayed investigation.

(4) That dull hearing is very serious and should be investigated without delay.

(5) That the advent of any ear symptom should signalize a careful, thorough investigation of the ears by one who has been specially trained in these matters. Thus will we bring about a better understanding of the ear and conserve its hearing function.

CIRCUMSCRIBED LABYRINTHITIS: REPORT OF A CASE.

BY

G. J. ALEXANDER, M.D., PHILADELPHIA.

(Read before the Homœopathic Medical Society of Pennsylvania, Sept. 21, 1920.)

OF the several forms of labyrinthitis the one known as "Circumscribed Labyrinthitis" is the most common and usually the least dangerous. The reason I have chosen this form of labyrinthitis for the subject of my paper is not because it happens to be the more prevalent and generally less severe, but rather on account of my having an interesting case illustrative of this particular form, where exceptional opportunities were offered for its detailed study from inception to complete cure.

Grossly speaking, the labyrinth is encased in a hard, dense, bony capsule situated in the petrous portion of the temporal bone. It is divided into two parts: (*a*) the static portion or vestibular apparatus, made up of the superior, inferior and horizontal semicircular canals and the vestibule sacs, the functions of which are equilibration, and (*b*) the cochlea, the function of which is hearing. Within the bony labyrinth is found the membranous which contains the endolymph.

Irritation of the membranous labyrinth by certain functional tests (turning, thermic and galvanic stimulation) produces definite reactions in the form of nystagmus. Again, pathologic states of the membranous labyrinth produces definite forms of nystagmus referred to as spontaneous nystagmus. Occasionally there is a peculiar reaction present in one pathologic state (fistula), that is spoken of as the fistula sign, more about which will be referred to in the course of the present paper.

Circumscribed labyrinthitis is an inflammation of a relatively small area of the labyrinth, while the remaining portion is normal. Circumscribed labyrinthitis is usually found in conjunction with some defect in the capsule (labyrinthine fistula). The horizontal canal is by far the most frequent point of invasion, less frequently the superior and inferior semicircular canals, the promontory, or a combination of one semicircular canal and the promontory. Invasion of the membranous labyrinth may occur at the oval and round windows, more commonly the former.

In the majority of instances the circumscribed form of labyrinthitis has its origin in chronic middle ear suppuration; a small proportion occurs in the course of subacute otitis media; while a still smaller number occurs in the course of acute otitis media.

The more important causes of subacute and chronic middle ear suppuration in which fistula of the osseous labyrinth with circumscribed labyrinthitis is to be found as a complication are tuberculosis, cholesteatoma, gun shot wounds, acute infectious diseases, and after the radical mastoid operation.

The condition most favorable to its production is one in which there is a tendency to a gradually progressive bone destruction. Hence it is that tuberculosis and cholesteatoma happen to be so frequent a factor in its causation. The acute form of otitis media rarely shows the marked bone destroy-

ing tendency, so that in these cases of circumscribed labyrinthitis occurring in the course of acute otitis media, the invasion takes place through the labyrinth window, when the inflammation tends to be more rapid and less circumscribed.

In a typical case the patient, during an attack of suppurative otitis media of some time standing, begins to complain of symptoms referable to the vestibule, such as vertigo, with or without vomiting, and inability to stand up; besides there may be symptoms referable to the cochlea, such as dullness of hearing and tinnitus.

For the purpose of arriving at the proper diagnosis, certain findings must be present, the determination of which requires a series of tests to be applied to the cochlear and vestibular portions of the labyrinth. At the time of the examination there is usually presented the history of attacks of vertigo. This need not be present at all times, for it not uncommonly happens that the symptoms vary somewhat from day to day or even from hour to hour. There may or may not be a spontaneous nystagmus to either side. Hearing is positive though diminished, the patient's gait may or may not be disturbed, the turning, caloric and galvanic reactions are always present, but may vary somewhat in degree from the normal, and the fistula symptom is positive, so long as the membranous labyrinth is not completely destroyed.

According to Ruttin the history and findings are briefly presented as follows:

<i>Previous History</i>	<i>Examination</i>	<i>Hearing</i>	<i>Turning Sensation</i>
Vestibular Symptoms in attacks	Vestibular Symptoms present or not	Positive +	Positive +
<i>Caloric Reaction</i>	<i>Galvanic Reaction</i>	<i>Fistula Symptom</i>	
Positive +	Positive +	Positive +	

THE CASE.—On May 10, 1920, Mrs. H. H., age 52 years, was first seen by the writer, referred to him by Dr. H. D. Evans, of West Philadelphia.

HISTORY.—The patient has been subject to violent attacks of migraine, with vomiting, supposedly toxic in origin, for the last thirty years. There is no history of any ear

trouble previous to the second attack. Two weeks ago she was suddenly seized with a violent headache, which at the time was considered to be another migraine seizure. She was given morphia in quarter grain doses once or twice daily for two or three days. Then the pain confined itself to the left side of the head, including the frontal, maxillary and temporal regions, which were also tender to touch, and it was discovered that she had a cold in the head, the result of recent exposure. She suffered severe chills and was confined to bed. The pain localized in the left ear, with tenderness of the tragus to touch, was followed one week later by a profuse purulent discharge.

EXAMINATION.—*Otoscopic findings*—Left ear. The external canal is filled with a large amount of non-offensive, thick, yellow discharge; after its removal the drum membrane is observed to be red and considerably thickened. A pulsating light reflex is noted in a perforation surrounded by a red granular looking edge in the posterior superior quadrant.

Right ear: the drum membrane is retracted, gray, thin, semi-translucent, and the cone of light almost obliterated.

The left mastoid region is negative as to any evidence suggestive of an associated mastoid involvement. Temperature, 99.

The rhinoscopic findings showed the mucous membrane to be generally red, swollen, and bathed in a sero-mucous secretion; the septum deviated to the right, pressing against the anterior end of the inferior turbinate, the right middle turbinate invisible because of the deviation, a marked hyperplasia of the left middle turbinate which is apparently plastered against the septum.

The bucco-pharyngo-laryngeal findings are: Two upper molars and one lower molar on the left side, all carious and more or less sensitive. The tonsils are red, submerged, and contain large crypts, from which is expressed a milky exudate. The mucous membrane of the larynx is somewhat pinker and thicker than normal.

The diagnosis of an influenzal infection of the upper respiratory tract including the left ear, with resulting acute suppurative otitis media was established. The patient was referred back to Dr. Evans for treatment in the meantime.

July 6, 1920, the patient was again referred to the writer with the history of having eleven days previously begun with attacks of headache, dizziness and vomiting, which have been

recurring, more or less, in paroxysms since, especially when standing or walking; during these paroxysms the patient was obliged to catch hold of something or to sit down to prevent herself from falling, surrounding objects appearing to move to her right. After lying down for three or four minutes, the dizziness becomes less pronounced or disappears altogether. At the present time she complains of mild shooting pains in the ear together with a sore feeling in front of the ear.

Examination showed the left membrane to be much inflamed, bulging, a pouting perforation in the posterior superior quadrant, and pus in the external canal. No spontaneous nystagmus is evident, but on inflating the middle ear after the Politzer method there was produced a horizontal nystagmus to the right side.

July 7, 1920. Since being Politzerized yesterday the amount and degree of dizziness has markedly diminished and the patient slept well all night, the first good night's sleep she has had since the symptom of dizziness first presented itself.

July 8, 1920. There is some dizziness, though not marked. Slight tenderness in front of the left tragus; though tenderness at this point has but little relation to a mastoid abscess, nevertheless mastoid involvement is suspected in this case on account of the history and findings of subacute suppurative otitis media.

FUNCTIONAL HEARING TESTS.

<i>Right Ear</i>		<i>Left Ear</i>
8 meters plus	Conversational Speech	8 meters
4 meters	Whispered Speech	on ear
	Weber	lateralized to left
Shortened 7 sec.	Schwabach	lengthened 15 sec.
35 sec.	+Rinne—	shortened 30 sec.
Normal	C1	not heard (with loud vibrations)
Normal	C4	shortened 86 sec.
Normal	Air	short .47 sec.

With a Barany noise-producing apparatus to the patient's right ear and a three-meter speaking tube to the left ear, the patient repeats the conversational voice with the speaker's mouth eight inches from the tube.

With a Barany noise-producing apparatus to the patient's

left ear and a three-meter speaking tube to the right ear, the patient repeats the whispered voice, the speaker's mouth being twelve inches from the tube.

FUNCTIONAL VESTIBULAR TESTS: GAITS.—With eyes open and closed, gait forward and backward good. With eyes open, hopping forward and backward good. With eyes closed, hopping forward and backward poor. Romberg negative.

TURNING TESTS.—With the head erect, after ten turns to the left, there occurred horizontal nystagmus to the right 16 seconds. With the head erect, after ten turns to the right, there occurred horizontal nystagmus to the left 12 seconds.

With the head bent forward 90 degrees, after ten turns to the left, there occurred rotatory nystagmus to the right 12 seconds. With the head bent forward 90 degrees, after ten turns to the right, there occurred rotatory nystagmus to the left 14 seconds.

CALORIC TEST.—Left or diseased ear, head erect—40 ounces of cold water about 65 degrees F. syringed against the drum membrane caused a small degree (one to two millimeters at equator of globe repeated every five seconds) of mixed rotatory and horizontal nystagmus to the right. In other words, the Caloric reaction is positive.

GALVANIC TEST.—

Right Ear:

Anode 8 milliamperes produced a rotatory nystagmus to left.

Kathode $5\frac{1}{2}$ milliamperes produced a rotatory nystagmus to right.

Left Ear:

Anode 2 milliamperes produced a rotatory nystagmus to right.

Kathode 3 milliamperes produced a rotatory nystagmus to left.

FISTULA TEST.—This test was made by Dr. Mackenzie and Dr. Alexander in the usual way, using the Gelle bag, rubber tube and olive tip, Dr. Alexander using the instrument and Dr. Mackenzie making the observations, and was again repeated, observers changing their positions. The first attempts were rather uncertain and unsatisfactory, but positive, in that there were eye nystagmic movements. A further test was

made using more force for compression and aspiration, with the substitution of an electric suction apparatus (Thompson Plaster Cabinet), with the result that by compression there was a distinct and pronounced mixed rotatory and horizontal nystagmus to the opposite, or right, side of about three millimeter excursions at the equator of the eyeball, movements repeating themselves about two per second, lasting as long as the pressure was continued. By aspiration the nystagmus was equally pronounced in intensity, of the mixed rotatory and horizontal type, directed to the same, or left, side, lasting as long as suction was continued, which, in the minds of the examiners, established the diagnosis of fistula of the osseous labyrinth in the region of the vestibule with an intact membranous labyrinth; otherwise there could not have been a fistula sign. Besides, functional activity of the labyrinth had been ascertained by the turning, caloric and galvanic tests previously conducted.

Transillumination of the left mastoid region with Cameron's illuminating instrument showed a dense shadow as compared with the bright light of the right mastoid.

On the strength of the history and findings as above recorded, it was decided that the indications were sufficiently clear to establish the diagnosis of mastoid abscess with complicating fistula of the osseous labyrinth in the region of the oval window, together with circumscribed labyrinthitis (inflammation of the membranous labyrinth in the corresponding region). The patient was, therefore, advised of the urgency of a radical mastoid operation—the earlier, the safer.

OPERATION.—On July 9th the patient was operated by the writer at the Anderson Hospital, Philadelphia, under ether narcosis administered by Dr. C. V. P. Vedder. Because of the interesting character of the case, Dr. Geo. W. Mackenzie was invited to be present and assist at the operation. The operation was begun by making a typical retro-auricular incision 4 c.m. long through the skin and soft parts to the bone. The periosteum was elevated forward and backward, exposing the entire external surface of the mastoid and also the posterior, superior and inferior wall of the osseous canal. The mastoid was opened with a No. 14 Alexander chisel, when there immediately welled up thick, yellow pus, as though under pressure. The external cortical plate was removed clear to the tip of the mastoid process. The cellular substance was found

to have melted down to one large pus-containing pocket, the surrounding wall of which was necrotic. There was a considerable quantity of granulations, which were curetted away. The mastoid antrum was entered with a curette. The posterior wall of the osseous canal was levelled and the remaining bridge between the middle ear cavity and the antrum opening was removed. On exposing the region of the external semicircular canal, it was found to be rough and not polished, as is found in the normal. In the region of the oval window there were large quantities of granulation tissues which were not touched for fear of breaking into the labyrinth and causing a more diffuse labyrinthine involvement. The upper wall of the canal was levelled at its deepest portion and was made level with the tegmen tympanum and the lower floor with the floor of the tympanic cavity. After repeated curettement of the wound and tympanic cavities, avoiding the region of the oval window, everything was left as clean as possible under the circumstances. The middle and posterior fossae of the skull cavity were not exposed. Plastic after Panse, wet iodoform dressings and plain outer dressings, over which a bandage was applied. The night after the operation the patient was very restless but complained of no vertigo or other symptoms directly referable to the ear. The maximum temperature that night was 100 deg., which gradually came to normal. On the third night after operation the temperature reached its highest (101.4), which gradually came down, reaching normal on the tenth day. This moderate rise of temperature was, no doubt, due to furunculosis which the patient suffered in both axilla, which was taken care of by her family physician, Dr. H. D. Evans, who on more than one occasion was compelled to incise the furuncles. Otherwise the patient made an uneventful recovery and was discharged from the hospital on July 14, 1920. Pulse and respirations maintained an average proportion with the temperature range, the average pulse rate for the fourteen days being about 100, respirations 22. The post-operative treatments consisted of the usual redressings, beginning on the third day. On July 15th the patient became an ambulatory patient and was treated at the office.

The patient was given a complete examination on September 15th, at which time I was pleased to have Dr. Mackenzie with me. The results were as follows:

Functional tests made 68 days after the operation.

FUNCTIONAL HEARING TESTS.

<i>Right Ear</i>		<i>Left Ear.</i>
8 meters+	Conversational Speech	8 meters
4 meters	Whispered Speech	On ear
6 meters	Akumeter	Not heard
Lateralized to left	Weber.	
Short 7 sec.	Schwabach	Short 14 sec.
35 sec.	+Rinne+	Plus minus
	—	
Normal	C1	Not heard
Normal	C4	Short 7 sec.
Normal	Air	Not heard

With the three-meter speaking tube to the right ear and the Barany noise-producing apparatus to the left ear, the patient hears conversational and whispered voice 100 per cent.

With the three-meter tube to the left ear and the Barany noise-producing apparatus to the right ear, the patient hears loud conversational voice 100 per cent., but is unable to repeat whispered words.

VESTIBULAR TESTS.—Gait, forward and backward, with the eyes open and closed, is quite normal. Hopping forward and backward, eyes open, quite normal, slightly faltering when closed, but hardly less so than in the case of the average normal individual. Romberg negative.

TURNING TESTS.—With the head erect, after ten turns to the left, there followed a horizontal nystagmus to right, lasting for 16 seconds.

With the head erect, after ten turns to the right, there followed a horizontal nystagmus to left, lasting for 10 seconds.

With the head bent forward, after ten turns to the left, there followed a rotatory nystagmus to right, lasting for 15 seconds.

With the head bent forward, after ten turns to the right, there followed a rotatory nystagmus to left, lasting for 9 seconds.

CALORIC TESTS.—Head erect, one syringe (4 ounces) of water (65. deg. F.) produced a rotatory nystagmus to the right side. In other words, the caloric reaction is positive.

GALVANIC TEST.

Right Ear—

Kathode, 2 milliamperes=rotatory nystagmus to the right.

Anode, 7 milliamperes=rotatory nystagmus to the left.

Left Ear—

Kathode, 4 milliamperes=rotatory nystagmus to the left.

Anode, 1 milliampere=rotatory nystagmus to the right.

FISTULA TEST.—Negative. That is to say, by compression and aspiration of air in the left (diseased) ear, no nystagmus was produced nor any dizziness. Right ear same as previously recorded. Left ear, mastoid wound is healed. The tympanic cavity shows the slightest amount of granulations. One small nest is present in the upper part of the median wall of the tympanic cavity, and another nest on the anterior wall of the osseous canal. The amount of discharge from the ear is negligible.

DISCUSSION OF THE CASE.—A discussion of the case seems almost unnecessary, in view of the completeness of the report which is herewith presented. However, the writer wishes to state a few facts of interest that occur to him.

1. Diagnosis of fistula of the osseous labyrinth in the region of the oval window as established from the history and findings prior to operation were confirmed both at the time of operation and subsequent to.

2. Cases of this kind generally do well if operated early enough.

3. The radical mastoid operation alone is sufficient to effect a cure or rather prevent extension of the inflammation from a circumscribed to a diffuse process.

4. Ordinarily such cases, allowed to go unoperated, are prone sooner or later to extend in area and take on a more serious character of inflammation; that is, a diffuse labyrinth suppuration with all the dangers that it entails.

5. In the event of a circumscribed labyrinthitis of the non-suppurative variety, no attempt should be made to meddle with the labyrinth at the time of the radical operation.

6. This case did so ideally well, confirming the previous statements.

In conclusion, I wish to take this opportunity to thank Dr. George W. Mackenzie, who examined the case functionally and otherwise prior to, during and following the operation. It is satisfying to me to further state that he confirmed all the findings herewith presented.

1831 Chestnut Street.

A FEW THINGS EVERY PRACTITIONER SHOULD KNOW ABOUT EAR WORK.

BY

HENRY BIERMANN, M.D., BLOOMSBURG, PA.

(Read before the Homœopathic Medical Society of Pennsylvania, Sept. 18, 1920.)

IN telling you a few things every practitioner should know about ear work you will not expect a scientific discourse. On the contrary, we are aiming simply to state a few facts familiar to all, yet a rehearsal of which is hoped to be especially beneficial to the doctor who does not specialize in ear work, rather than to the otologist.

The most successful practitioner is the one who recognizes his limitations, and this is our first proposition. In other words, every one should know when he does not know. All will agree that the majority of physicians are, or try to be honest, not alone to their patients, but also with themselves. It is a human failing to "kid" oneself into believing we know as much as the other fellow, or at least enough to get away with a case. It goes against the grain to admit a case is beyond our knowledge and skill and to advise a consultation or to call in more skilled help.

We have seen a patient dismissed with some homœopathic remedy for an ear filled with an impacted cerumen. Fortunately, this patient did not fall into the hands of some of our old school friends and give cause for ridiculing the sugar pill doctor. We have experienced a patient receiving a learned discourse on the condition of his membrana tympani and eustachian tubes when a half inch plug made even a guess as to what was below out of the question. This was an old school doctor. But why both of these? Either the ear speculum was not used or the examiner did not recognize what he was looking at. To make such an examination successfully at all times is not easy, but the use of a speculum is far from difficult, and both the cases cited were simple and marked illustrations of impacted cerumen. To make frequent use of the speculum, in fact, to use it in every case of earache and ear conditions is a duty. We should become familiar with the use of the ear speculum, both the one used with the reflected light and the electrically lighted one, for the appearance of the auditory canal is different in each. We should be familiar with the

appearance of the normal and the abnormal canal. No one can advise unless they can distinguish between the two. To differentiate between the forms of the abnormal successfully is not a matter of an attendance upon a few weeks of lectures and clinics, but of years of training. For this reason the general practitioner is only expected to know enough to advise, to prescribe and treat if he can, or to refer to more skilled help if beyond him. As homœopaths we are too often ridiculed because we are too eager to look for the indicated remedy rather than to make an intelligent examination and diagnosis, and rightly so. But as physicians of all schools we are only too often guilty of neglecting to make an examination at all.

It is an established fact that the largest majority of inflammations of the middle ear with their subsequent train of diminished hearing, have their inception from throat infections and conditions that are abnormal. It is no wonder then that measles, scarlatina, tonsillitis, diphtheria, as well as the lung inflammations with the forcible ejection of debris teeming with bacteria into the throat and into the eustachian tubes, are accompanied or followed by an inflamed and discharging ear. It behooves us to be ever watchful in such diseases and to recognize an otitis media before the purulent discharge makes it apparent to all.

No one affection of the body is more neglected or mistreated, both by the medical man and still more often by the laity, than an inflammation of the middle ear. True too often, by far too often, the physician sees these patients only after an intensive course of onion or garlic plugging, or applications of sweet oil or many times no attention at all. The ears often have been discharging for weeks when we are asked to stop the discharge and restore the hearing. But suppose we have had the patient under our care from the beginning, perhaps been attending him for one of the affections enumerated a short time ago, what then is our duty and how are we to conduct the case? If pus has already collected and the drum shows a bulging, of course, the same rule applies here as in a collection of pus elsewhere, free drainage, free incision of the membrana tympani, and not awaiting until the membrane has become gangrenous and liberated the fluid by a rupture. We insist in being more radical. In an early myringotomy we have a means whereby a threatened suppuration may be

avoided or aborted. We are satisfied from personal experience and from that of prominent otologists, that, performed as soon as the drum head is congested, even before there is any bulging, the relief of pain is immediate and the long train of suppuration and danger of infection of the adjacent mastoid cells avoided. Of course, it must be done skillfully and under rigid asepsis. Performed under these conditions it is a perfectly safe procedure. The results of this technique were so striking in the work of the otological section of one of the military base hospitals with which we were connected that a report was made to Washington and is on file in the Surgeon General's Office stating that not a single case of mastoid infection occurred during a period of over one year and during an epidemic of measles and scarlet fever with the usual percentage of ear infections. During this same period other camps reported numerous mastoiditis and deaths following the same diseases.

In conclusion: Become familiar with the appearance of a normal auditory canal. Become skilled with the use of an otoscope. Use it. Don't forget to look into the ear along with taking the totality of symptoms. Early incision of the drum head will make for lessened suffering and reduce the duration of an acute otitis media. Lastly, and perhaps most important, be sure you know when you don't know.

THE ADVANTAGE OF ATROPINE IN REFRACTION.

BY

HENRY L. GOWENS, JR., M.D., PHILADELPHIA, PA.

(Read before the Homoeopathic Medical Society of Pennsylvania, Sept. 18, 1920.)

It is not the purpose of the author to describe the chemistry and physiological action of atropine sulphate as this has been previously done by him in the *Journal of Ophthalmology, Otology and Laryngology*. It is, however, the purpose of the author to dwell upon the cycloplegic action of atropine in contradistinction to its mydriatic action and the mydriatic action of all other drugs used for refraction.

It is believed that every one concedes that, unless contra-indicated, the cycloplegic action of atropine enables the meas-

ure of the total error of refraction. Any condition short of complete relaxation of accommodation gives a refractive result nearer to that of a manifest refraction than to that of a static refraction. This seems to be the universal teaching as to refraction.

Without naming all of the other drugs which cause a mydriatic effect instead of a cycloplegic effect, it is sufficient to state that every one relies upon the cycloplegic action of atropine.

It does not seem unreasonable for every conscientious refractor to know the static condition of the patient's eyes. Should you grant this as being the condition of my statement then atropine has the advantage in its cycloplegic action.

Atropine must be used in sufficient strength and for a sufficient time to attain its cycloplegic action. A plus three sphere will overcome the annoyance of the loss of near vision and a pair of dark glasses will overcome the photophobia. A post-cycloplegic refraction will enable one to prescribe just what part of the total error the patient will tolerate. In the case where the patient has not the time for a post-cycloplegic refraction the prescription may be given using one's judgment according to the patient's manifest refraction which should have been taken upon the first examination of the eyes, and also taking into consideration the condition of the muscles which should have been measured at the first examination of the eyes.

The author wishes to point out this advantage not only for the sake of the good work accomplished for the patient but also for those ophthalmologists who, because of the distance of the patients, have only a short time in which to complete their work.

The author feels that the advantage of atropine in refraction prevents the constant reglassing of patients previously done by a mydriatic which they could overcome, gives those not refracted by ophthalmologists their proper glass and enables the ophthalmologists by their knowledge of the total error of refraction to increase or diminish as the case may need in order that the patient may have a comfortable glass.

37 South Sixteenth Street.

DISCUSSION ON EYE AND EAR PAPERS.

DR. GEORGE W. MACKENZIE, Philadelphia: Dr. Clay's paper is one of timely interest, and appeals, as it no doubt was intended to, to the general practitioner. There was a time when hearing troubles were viewed rather pessimistically, but more recently we have come to look upon them rather optimistically. The result in the treatment of recent deafness, even of pronounced degree, is quite favorable in the majority of instances. It is not uncommon to obtain excellent results even in cases of nerve deafness, providing they are of recent origin. The more so where syphilis is found to be the cause. On the other hand, we cannot expect to obtain results where the cases are first seen by the specialists years after the damage has been done. Let me cite a case of late syphilitic neuro-labyrinthitis that would have yielded readily had the condition been recognized early:

A man who was deaf had been operated on about four years previously for mastoiditis by a surgeon of good reputation. The wound had not healed. A casual examination showed that he was not seeing well. On looking more closely opacities on the cornea were detected. Hutchinson's teeth were also present. The case was evidently one of congenital syphilis. A Wassermann was made, and found to be negative. Nevertheless, it was a case of congenital syphilis. The patient was put on anti-syphilitic treatment, and managed to obtain slight improvement in the hearing. More pronounced was a feeling of well-being that he had not experienced before. There followed also a material increase in weight. It was too late to hope for results so far as the hearing was concerned that we might have expected had the treatment been begun at the time of his first middle-ear trouble. I cite this case to bear out the statements that the other gentlemen have made, and for the benefit of the general practitioner.

Dr. Clay deserves credit for attempting to impress you with the importance of recognizing ear conditions early, and, if the general practitioner cannot manage them he should send them to someone who can, and not before it is too late. May I add that if a case with acute secretory catarrh is seen and treated properly (and the treatment is not so difficult), and the adenoids and tonsils are removed, the results are pretty nearly 100 per cent. We specialists do get results, when we see the cases early; but nine or ten years after the patient is deaf, secondary changes have taken place in the form of scar tissue when the results cannot be obtained.

DR. GEORGE H. HAAS, Allentown, closing: I am under

the impression that every doctor who uses atropine has been warned of the danger of producing an increase of congestion. I did not go into the details of the treatment as well as I should have done, for the simple reason that I had not time. I want to thank the men who discussed the paper.

DR. JOSEPH V. F. CLAY, Philadelphia, closing: Dr. Mackenzie made the statement that many of the cases of deafness which come to us for treatment can be traced to circumstances which have occurred in childhood. This deserves emphasis and we feel that we who practice this specialty should impress this fact upon the general practitioners. Prophylaxis of ear conditions starts in early childhood, therefore, it comes under the general practitioner's domain. He must know what these conditions are which, if neglected in early life, will later produce dull hearing.

Our remarks are not to be interpreted as casting reflection upon the physician but to stimulate a keener interest in this subject. A busy general practitioner cannot usually devote the time required for a detailed otological examination. Furthermore, it requires special training and an abundance of experience under the guidance of an experienced teacher in order to acquire the necessary knowledge to make these examinations and interpret the results. What the specialist is endeavoring to do is to teach the general physician how to recognize the sign posts in the symptomatology of ear diseases and to recognize the signals in cases requiring this special investigation.

DR. JOSEPH V. F. CLAY, Philadelphia: Those who have followed recent otological literature will recall the excellent papers of Doctor Mackenzie upon the labyrinth and pathological conditions of same. This writer deserves a great deal of credit for the persistency with which he has pursued this subject and the great wealth of information he has given the profession. Unfortunately, these writings do not reach the men who should digest them, or reaching them, are not digested.

The subject of neuro-labyrinthitis appears to the general practitioner as vague, and uninteresting. He assumes an indifference because he does not feel that it is within his domain when, as a matter of fact, he is the first man who sees these cases. The symptoms are frequently obscure and not especially suggestive of a deep-seated ear lesion. We are reminded of a case which came to us recently, a woman, whose complaint was, pain in the retro-maxillary fossa and slight dizziness. The physician whom she consulted informed her that he did not know what her trouble was, but since she was

dizzy, he would suggest that she consult an ear specialist. Our examination showed a destructive lesion of the static labyrinth. The acoustic labyrinth had not become sufficiently involved to cause an appreciable dull hearing, although upon careful examination, the hearing was found to be below normal and the lesion in the perceptive apparatus. A careful differential diagnosis narrowed down to a possible luetic infection. The laboratory returned a four plus Wassermann. Had this case fallen into the hands of one less frank, or one who allowed the case to drift along, the chances are that treatment would have been of little value as regards the function.

We agree with Doctor Mackenzie in his statement that cases of neuro-labyrinthitis are not unusual. More recent methods of investigation of the ear show conclusively that many cases of deafness which have been subjected to old time methods of treatment, belong to this class where the treatment should have been applied to the systemic condition which was the case of the neuro-labyrinthine lesion.

DR. P. H. GERHARDT, Reading: This discussion recalls a case I had sometime ago; it was a referred case, sent to my office. The patient complained of deafness and some pain in the left ear. He had a catarrhal condition in the conducting apparatus of both ears. In the left ear, the tube was closed; and we opened it by passing a dilator through a catheter. The catarrhal condition cleared up, he could hear somewhat better; but still had considerable pain. In the left ear there was diminished hearing to the higher pitched forks. The catarrhal condition cleared up and the drum-heads looked better, but the pain in the left ear continued. We could find no symptoms of any kind accounting for this pain. We finally got a specific history; an infection fifteen years before this time, and a Wassermann test showed plus four. After receiving anti-syphilitic treatment, the pain in the ear disappeared and his general condition improved. He has gained twenty-eight pounds in weight and looks like a different man.

DR. JONAS W. STITZEL, Hollidaysburg: While listening to Dr. Mackenzie's paper, it occurred to me and I am thoroughly satisfied that many men doing ear work do not know the simple functional tests. Many cases come to me where the men have not even looked at the patient's ear; simply making the statement that nothing could be done. In other cases they have looked into the external auditory canal, and probably noted a thickening of the drum; and half of them have not gone into the functional tests at all. So-called nerve troubles seem to be very poorly understood by men doing nose and throat work. I am astounded that so little attention

is paid to the functional tests by many men doing ear work. I am sorry that I had to stop Dr. Alexander, because he doubtless would have gone into these conditions. It is remarkable that so few men make the functional tests or have instruments to make them. I am sorry to say that I think that is true of a good many men throughout the country.

Another thing that Dr. Mackenzie brought out is that we do not appreciate the fact that certain drugs in use by the Old School, particularly, have a marked effect upon the internal ear. We know that quinine, salicylic acid and drugs of that kind do have a bad effect in some cases. I remember, during the gripe epidemic, of seeing a number of patients who had been treated by the Old School physicians for either the gripe or the rhinitis. Accompanying the disease many of these patients had some deafness. One had almost complete loss of hearing afterwards, as shown by the functional tests, from involvement of either the nerve or of internal ear. This cleared up in two weeks.

Another thing brought out by Dr. Alexander and Dr. Mackenzie is the frequency with which internal ear troubles are due to a syphilitic cause. I remember seeing a young man in our town with typical symptoms of internal ear involvement. Although he had had two injections of 606 when he came to me first, he came on account of the marked vertigo and staggering gait, and the marked loss of hearing. My records show that the involvement was about equal on both sides. Notwithstanding the two injections that he had had, the condition came on while he was undergoing anti-syphilitic treatment. By continuing anti-syphilitic treatment, however, the young man made a complete recovery. Very often such patients do not recover. It took three months in this case before the condition cleared up completely. This occurred in the secondary stage of syphilis. You will find that in many cases, in fact most cases, it is the tertiary stage; but in this case it was the secondary stage.

DR. G. W. MACKENZIE, Philadelphia, closing: It is hard to make clear, in a short time, how one can diagnose neuro-labyrinthitis and place the finger on the particular agent that is causing it. I prefer addressing my remarks to the general practitioner, for he usually sees these cases first. Neuro-labyrinthitis is pretty nearly as common as deafness and vertigo. The pathology of neuro-labyrinthitis is pretty clearly established. When you begin to consider the number of causes, you can see that it is a tremendous problem. I have mentioned some of these causes. They may run into hundreds, if we are to include the most rare. They frequently

follow in the wake of the acute infectious fevers. The tendency in this class is to get well. Some, however, do not. Then there is the chronic infectious type. When you come to the drug type, you find that the list of drugs that cause vertigo and deafness includes lead, tobacco, arsenic and mercury besides many other exogenous toxins. I had a case of an ear specialist's wife at Huntingdon, Pa., who was suffering from acute deafness and vertigo. The ear specialist recognized the fact that the vertigo could come from an involvement of the eighth nerve and had me go over the case. She had been poisoned with ivy. The lesions were on the buttocks and lower limbs. A general practitioner had been called in and prescribed lead-water and laudanum to be used locally. He told the patient to bathe the parts with the solution once or twice a day; however, in her desire to hasten matters she used it every two hours practically keeping the parts wet the twenty-four hours around. On listening to the patient I suspected that it was a drug case and said, "Have you been using any drugs lately?" Then she related to me the above account. Knowing that in neuro-labyrinthitis lead mostly selects the left side, I said, "That is probably the cause of your ear symptoms. Stop using the drug." I advised the drinking of sulphuric-acid lemonade. Her husband told me, a short time afterwards, that she was entirely well of her deafness and vertigo.

I may later give a detailed report of the method of examination in this case. I should like to reduce it to the simplest terms for the benefit of the general practitioner. The number of quinine cases that I have seen are numerous. Within the last six months we have had nine or ten cases of almost complete deafness with more or less loss of equilibrium sense, as the result of people taking quinine for one thing or another, sometimes prescribed by physicians.

Syphilis is one of the most common causes of neuro-labyrinthitis and if we are to believe the findings of several who are working on the problem, practically every individual who contracted syphilis shows at some time between the appearance of the chancre and the development of the secondary symptoms a positive spinal fluid Wassermann. At the same time there occurs a shortening of bone conduction; showing that syphilis exerts a deleterious influence on this apparatus (inner ear and eighth nerve) very early. When you get a history of bilateral impairment of hearing, which tends to be rapidly progressive, combined with vertigo, the evidence is very strong for syphilis of the inner ear and nerve.

If, added to this history, we find the bone conduction to the tuning fork diminished the case is one of syphilis, four

times out of five; whether the Wassermann is plus or minus makes no difference. It will be plus in the acute syphilitic inner ear conditions; but in some latent cases it may be minus, even with the spinal fluid. Drugs will produce similar effects but in these cases the condition does not tend to be rapidly progressive as in syphilis.

If the general practitioner will bear in mind when he gets a case of impairment of hearing to use a tuning fork, and if he hears it longer than the patient does he knows that the trouble is in the inner ear, and not the middle ear. If the hearing trouble were in the middle ear, the patient hears the tuning fork longer than the examiner if the examiner himself is normal.

In regard to the question about the use of mercury or anti-syphilitic treatment in cases of neuro-labyrinthitis due to syphilis, I would say that if you get the case early, it yields beautifully to such treatment, and as readily as does any other syphilitic manifestation. If you get a case of hereditary syphilis in which the patient has grown deaf four or five years previously, you get no improvement from such treatment. In a case of six or eight months' standing you will get some improvement; but not so much as if you begin the treatment earlier.

Concerning the mastoid, I have all my suspected mastoids X-rayed; and it is an aid. I would not depend on it alone, however. I think that is the consensus of opinion among the other gentlemen.

DR. GEORGE J. ALEXANDER, Philadelphia, closing: The question referring to the value of the X-ray for diagnostic purposes in mastoid affections was answered by Dr. Mackenzie in his closing remarks. Another gentleman suggested the advisability of writing these papers so that the general practitioner can more readily understand the subject. Personally, as a rule, I make a special effort to write papers for the particular advantage of the general practitioner; so much so that I fear, at times, it is detrimental to the scientific part of the subject and myself.

However, in all these papers, if the general practitioner will stop to consider the matter carefully, he will see, ordinarily, that the effort is made to impress upon him the necessity of certain lines of procedure in these ear cases. While we do not expect, as Dr. Mackenzie says, these gentlemen to understand all the tests, we do want to try to make clear the idea or the impression that they can get enough information to suggest to them what their patients are suffering from and the procedures that should be taken in the patients' in-

terests, by first making as thorough an examination as possible themselves; and then, if they find conditions they do not understand, they will realize more readily the importance of referring the patients or calling upon someone for an opinion, diagnosis, etc.

Now, then, that is one thing. Another reason we try to make these suggestions to the general practitioner is: Take, for example, the subject of suppurative otitis media; my paper was for the purpose of reminding the general practitioner that complications may arise in an acute or sub-acute for eight or ten years and hardly knows what the cochlea or the labyrinth are for, and the terms are confusing to him. He sits and listens to a classical paper like this and does not know what has been said. I wish that sometime Dr. Mackenzie would give the Society a paper written in the simplest language—one in which the general practitioner would be interested and one that he would understand. These papers are refinements in special lines, and I think that Dr. Mackenzie should be highly complimented, for I know that we all appreciate his work. He is one of the biggest men in the country in that line. If he would, perhaps, tell us that this trouble is an inflammation of the endings of the eighth nerve in the internal ear, we would appreciate it more; and I would like him to tell us if antiluetic treatment relieves the condition when the cause is due to syphilis.

DR. S. B. MOON, Pittsburgh: The papers are all classical ones and it is hard for a general practitioner to comprehend them. He has, perhaps, been away from the study of anatomy or chronic suppurative otitis media. A great many patients are referred to me and other otologists, who have had a long-standing chronic suppurative otitis media, which may have had no complications to date; but complications often occur suddenly, and patients are in constant danger of any one of a number of very serious ones, such as a brain abscess, acute suppurative mastoiditis, meningitis, circumscribed or diffuse labyrinthitis, and others of equal importance. These patients should be given the advantage of being put in a position to receive the proper treatment, as early as possible, in some instances to save life and others to save or preserve function. Hence it is with these facts in mind that an effort is made in these papers to suggest to the profession when to look, what to look for and when to call for help.

HOW SHALL WE TREAT CANCER?

BY

HERBERT L. NORTHROP, M.D., F.A.C.S., PHILADELPHIA, PA.

(Read before Homœopathic Medical Society of Pennsylvania, Sept. 21, 1920.)

THE treatment of cancer seems always to be the burning question of the hour. And I use the participial adjective "burning" with both a figurative and a literal meaning, for perhaps there is no therapeutic question which is farther from solution and which, therefore, demands more serious and frequent consideration than the treatment of cancer, and for that reason the oft quoted expression, "it is the burning question of the hour" is appropriate here, and it is equally true that destroying cancer by burning it is one of the highly successful methods of its treatment today. Please note that my two colleagues and I are confining ourselves today to a consideration of the treatment alone of cancer. This, to our minds, is the all-absorbing phase of the subject. We have no new or original kind of treatment to tell about, but our experience with well-known, standardized methods will (pardon me) be worth listening to.

The knife, in the treatment of cancer, has been tried and found wanting, and the knife, in the treatment of cancer, has got to go—not too far away, not completely out of sight, but the knife must take a back seat in the removal of some cancers. In other words, cutting out cancer has been for many years and is, today more than ever, acknowledged to be a poor way of curing cancer. In using the knife we are advised to give the disease a wide berth, but it is impossible, apparently, to remove enough normal tissue beyond the disease margin to successfully prevent a recurrence either in situ or at a distant point. And whether the disease margin can be accurately located at the time of operation is often a very doubtful matter. Let it be remembered that wherever the knife cuts there, and there only, its work is done; innumerable blood and lymph vessels are opened and only a small proportion are sealed by ligature or clot. The vast majority remain open.

How supposedly different is the effect of other methods of treatment. Radium and X-ray are believed to penetrate into the diseased tissues, attacking the pathological cells both of the main or primary lesion and at the same time the out-

lying, scattered cells and involved blood and lymph vessels. A similar action is also attributed to the high frequency Oudin or d'Arsonval currents, and, in the light of our present knowledge of the subject, the effect of these currents is more positive and penetrating—more destructive to the cancer tissue, both primary and metastatic, than either the Roentgen ray or the radium. "In addition to the dessication or coagulation of tissues by these currents," says William L. Clark, Philadelphia, "and the sealing of blood and lymph channels, the heat penetrates beyond the area totally destroyed and devitalizes malignant cells without impairing the healthy tissue, thus lessening the likelihood of local recurrence or metastasis and conserving the maximal amount of normal tissue." Because of the value and the limitations of the knife, of radium, X-ray and the high frequency currents, in the removal of cancer, it naturally follows that one or another of these methods, or a combination of them, is the best way of destroying cancer to-day. Results warrant this statement: more cancer patients are permanently cured or enjoy a longer period of immunity to-day than ever before. Immunity from recurrence for a period of three years used to be considered a cure. Now it is arbitrarily said that the case is not cured until there is freedom from recurrence for a period of six years. Formerly the knife and the crude arsenical paste or plaster were the only implements available for combating the cancer scourge. Today our remedies are multiplied, and we are permitted to individualize our cases, which is a great advantage. And then educational propaganda has warned the laity of the dangers of neglecting a suspicious lump or growth: the man is afraid of a sore on his tongue or lip; the woman is frightened if she discovers a lump in her breast; if she has an offensive, sanious leucorrhoea she knows there is something wrong; distress felt in the upper abdomen and loss of weight cause the patient much anxiety and concern and today, more than ever before, people seek specialists to find out what is wrong with them, and most of them have a deadly fear of cancer. The laity, even more than the profession, believes in the heredity of cancer, and it is well that it is so. Better and more knowledge, modern apparatus and methods for making diagnosis, not to forget extended experience, enable the physician to discover, or to suspect, cancer before it has advanced beyond all hope of cure. These are factors contributing to make our can-

cer cures more numerous and more real today than yesterday.

The question of treatment of malignant disease may be summed up today as follows: If the testimony of roentgenologists is to be accepted (I wish I were less pessimistic), some varieties of cancer are curable by X-ray. I have seen so many failures and very sad results, *and not one cure*, from X-ray treatment, I cannot help it if I am worse than a doubting Thomas.

As far as radium is concerned my observations prompt me to acknowledge its value in the treatment of carcinoma although (and this must be confessed for all methods of treating cancer) it fails with deplorable frequency. Yet I am willing and glad, always, to accept the evidence of the value of radium offered by my conscientious and able friend, Dr. Frank C. Benson. Radium achieves its real success when it is applied to external, squamous-celled lesions which are superficial and of limited area. It is, therefore, suitable in a large number of cases. I am not in a position to speak for the value of radium in the treatment of internal or deep-seated cancer, except that I am compelled to acknowledge with regret its failure in a large number of such cases. Until convinced of its greater efficacy I must, therefore, remain skeptical of its curative properties in the treatment of most and the worst forms of cancer.

From personal experience with high frequency electrothermic desiccation and coagulation, and also from the experience of others who use electricity for the destruction of cancer, I am persuaded that other methods, including the knife, are going to be regarded as secondary in relative value to the electrothermic form of treatment. "The proof of the pudding is in the eating," and the simplicity of employment and the results of this treatment warrant every word spoken in its favor. It should be understood right here that desiccation and coagulation have hitherto been used only in the destruction of the more superficial cancers, also those of the tongue, tonsils, pharynx and larynx, of those of the neck after they have been uncovered by the knife, and of cancers of the cervix, bladder and penis. I am planning to coagulate a breast cancer some time next week and I am confident the method will be easily applicable and in the long run will be preferred to cutting alone. In some cases where electrothermic coagulation (electrocution is a very apt word right here) is employed sur-

gery is called for to expose the main lesion or to uncover the infected lymphatic nodes so that the coagulation electrode (needle or knife) can be brought into direct contact with the cancer. While we believe there should be little or no cutting—the least possible—nevertheless a combination of surgery (cutting, exposure, ligating vessels, etc.), and coagulation is often required.

Desiccation, a unipolar application of the Ouidin current, is employed to destroy small, superficial lesions, which can be accomplished usually under the influence of a local anesthetic. Ordinary warts, pigmented moles, tubercular patches, angiomas, nevi, tattoo marks, xanthelasma, epitheliomata and rodent ulcers, all are found in the list of lesions removable by the desiccation method. And the removal is accomplished at one sitting at the office.

Coagulation, the more powerful of the two methods, is a bipolar application of the d'Arsonval current for the removal of larger lesions and for the use of which a general anesthetic must be administered. Superficial cancers of any part of the body, of the tongue, fauces, pharynx, jaws, orbit, neck, auricle, urinary bladder, penis, etc., even where underlying bone is involved, or the cancer is attached to bone and its periosteum—all may be totally destroyed in one operation by the coagulation method. Involved bone may be penetrated by the current and in a few days the bone so treated will have separated from its attachments and be cast off like a sequestrum. Hemorrhage does not occur, to any appreciable or annoying degree, either during the operation or secondarily. In fact, the current may be used to control bleeding by sealing the blood vessels. In this manner a cancer of the tongue may be electrocuted bloodlessly.

Shock occurs in direct proportion to the length of time required to accomplish the destruction of the lesion. Neighboring involved lymphatic glands may be exposed by the knife and destroyed by the current, either at the time the primary lesion is attacked or at a second tempo. If not treated at the original electrocution these glands will apparently lose their malignant activity, shrink in size and remain dormant for a prolonged period, but still a menace to the health and life of the individual.

Such are some of the high-lights in the treatment of malignant disease (carcinoma and sarcoma) by electrothermic

desiccation and coagulation—methods which, to my mind, are in the infancy of their range of application and which, in the hands of surgical and medical electrical experts, bid fair to revolutionize the treatment of this fearful scourge of the human race.

HOW SHOULD CANCER BE TREATED?

(RADIUM THERAPY.)

BY

F. C. BENSON, JR., M.D., PHILADELPHIA, PA.

(Read before The Homœopathic Medical Society of Pennsylvania, Sept. 21, 1920.)

THE somewhat fanciful theories of the past concerning the use of radium in cancer have given place to scientific facts determined by years of research, observation and experiment. There is no evidence that radium, in itself, is a cure for cancer, except in the few instances to be noted later. But it has been proved conclusively that it has a direct alterative effect upon abnormal tissue formation and especially upon cancerous tissue formation. It has been shown that its use in conjunction with surgery has marked a period when operative results have been much better than in the past and has demonstrated that it is a most necessary part of the surgeon's armamentarium. In speaking of results obtained in cancer by this agent, we must be governed by its method of use, that is to say, whether it is employed in a curative, alterative, prophylactic or palliative sense. As a cure, in itself alone, its use is limited to small superficial lesions without lymphatic involvement and those senile changes which have been termed pre-cancerous. A word of warning is here very necessary. Among the so-called pre-cancerous conditions may be classed cracks and small ulcerations of the mucous membrane of the lip edges, especially of the lower lip, and while radium may be used here as a prophylactic its use is contraindicated when a diagnosis of cancer has been made. We have seen a number of cases so treated where the original lesion had entirely healed to be followed in a comparatively short time by malignant change in the submaxillary and submental lymph nodes; such cases usually going on to a fatal termination. The better method being a total excision of the cancerous area to be fol-

lowed by radiumization of the operative scar and the nearest chain of lymphatics; this course being followed by a large percentage of cures.

While radium undoubtedly has a marked palliative action in advanced cancer causing a decrease in pain, hemorrhage and fetor, its inherent ability to cause alterative changes in limited and operable cases, as well as in individual lymph node invasion, is the characteristic which has been most impressive to all investigators. Sections of growths so treated show a marked decrease in the original cancerous element and a predominance of new fibrous content. To achieve the desired result in this direction, however, several factors have to be taken into consideration. In the first place it is most necessary that the rays must penetrate every portion of the growth—it being just as illogical to treat a portion of the lesion in this way as it would be to attempt a surgical cure by partial excision. This means that the growth must be limited in area, and, in the case of the larger lesions, the radiation must be centrifugal from a central point—this being accomplished very well by the Lee needle method of administration.

Small amounts of radium used in cancer work are more likely to do harm than good, causing a radio-excitation with rapid increase in the growth. It is well to use not less than 25 mgms. (element) in this work and preferably 50, 100 or more, if it is possible to do so. The use of radium is attended with certain dangers as some of its rays are destructive to normal tissue and must be screened off by the use of metals which they will not penetrate, platinum, brass, silver, lead and, also, rubber being used for this purpose. It is well for one working with radium to have a definite knowledge of its physics and technic of application both to obtain the desired results and to avoid injury to patient and operator. No hard and fast rules can be given as to dosage, this being governed by the amount used and the location and size of the lesion under treatment. As said before, it is most important to radiate the entire involved area and to use proper and sufficient screenage, for upon these two factors depend the results obtained. The amount of radiumization is indicated by mgm. hours, each mgm. of the element used for one clock hour. It is our rule to use at least 2,000 mgm. hours during the first series of exposures, varying as to the number of applications according to the situation and extent of the condition.

RESUME OF RESULTS.—In small limited lesions of the face, especially those occurring about the eye, nose and ear the results are good and in a large percentage of cases may be considered curative, but when the mucous membrane of the eye-lids or of the nose is involved the prognosis as regards cure should be guarded. In growth involving large areas of destruction about the face and jaws radium should only be used as a palliative or as a pre- or post-operative procedure. Its limitations in cancer of the lip have already been cited. In inoperative growths of the larynx very definite alterative changes and inhibitory action has been observed, and the same may be said of malignant lesions of the oesophagus, but in cancer involving the mucus membrane of the cheeks, and of the tongue, the results have been very unsatisfactory. We believe radium should only be used in cancer of the breast following operation and that its use is especially indicated in the lymphatic involvement of these cases both in the axillary and clavicular chains. In a series of cases so treated the percentage of recurrences has been greatly decreased. Our work with radium in tumors of the urinary bladder has shown very brilliant results especially in primary and degenerating papilloma, causing a marked change in the afferent vessels followed by ischemia and disintegration of the growth, which does not seem to recur. In cancer of the prostate and bladder-wall marked alterative changes have been noted, especially after the use of the Lee needle method, but if a considerable portion of the bladder wall is involved the result can only be palliative. Very definite results have followed the radiumization of inoperable cancer of the rectum, the growth taking on a fibrous change resulting in a stricture formation which allows of dilatation; but while these cases are given remarkable relief it must be remembered that such changes are only local and have no bearing upon the pelvic and abdominal dissemination which is so frequently concurrent. In cancer of the uterus involving the fundus with broad ligament invasion radium can only be considered as a palliative or to be used before and after operation with a hope of preventing recurrence, but in cancer limited to the cervix its use is followed by results which are, to say the least, remarkable. In these cases the ulcerated, sloughing, bleeding mass is replaced by tissue which is apparently fibrous, in some cases going on to be covered by mucus membrane, but it has been our experience that there is

a recurrence of the disease in from four to six months in many of these cases and that the recurrence does not react to treatment as did the primary lesion. However, there have been approximately 10 per cent. of these cases which have remained apparently well for periods of from six to twelve months and, although we do not in any sense consider them cured, it must be remembered that most of these lesions were considered inoperable when the treatment was undertaken.

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ELECTRO-THERMIC THERAPY FOR CANCER.

BY

WALTER C. BARKER, M.D., PHILADELPHIA, PA.

(Read before The Homœopathic Medical Society of Pennsylvania, Sept. 21, 1920.)

MORE than fifteen years ago, many electro-therapeutists were using the high frequency currents in the treatment of surface neoplasma. In 1905 the first publication on the subject appeared. This was by Dr. DeKeating Hart, of Paris, and stated the value of this current in the treatment of malignant growths. Dr. Hart's method was to remove the growth by excision and then apply into the wound long sparks from a resonator discharge.

It was thought that high frequency currents had some special selective action upon cancer cells, but this theory was disproved by Dr. James F. Percy in his report on the observations of the effect of heat on the growth of cancer cells, when hot soldering irons were applied to the tumor.

Dr. Massey claimed good results in the treatment of cancer from the "Ionization" of cancer cells by the galvanic current. It was found that better results were obtained when specially constructed machines for the purpose of gaining a greater amount of current were used. These also gave much more heat penetration.

The good results reported from these various methods of treatment for cancer, seem to be due to the effect of heat upon the cancer cells. The soldering iron method required a great deal of skill. In order to have enough heat applied to the outside to penetrate into the tissues, there is danger of

charring the surface which is in contact with the iron; and this charred surface becomes a poor conductor of heat, thereby defeating the object of the treatment. The galvanic current produces the heat in straight lines between two poles; so that both poles must be introduced into the growth, with the result that the heat is confined largely within the tumor. This method, like that of the soldering iron, has a very limited field of usefulness.

The high frequency currents have been used in many different ways. DeKeating Hart used the long sparks, which did not seem to have any visible effect upon the tissues, other than a slight change in color. This is called fulguration, and has less therapeutic value than any of the other high frequency currents in use.

Another method of applying the monopolar type of high frequency current was named "Desiccation" by Dr. Clark. This treatment is applied by placing a needle in contact with the tissue to be treated, and is of value where but little heat is required. Diathermy, which was first described by Nagelschmidt, is a bipolar application of the high frequency current, in which two electrodes of the same size are applied, facing each other, on opposite sides of the growth. The tissue between the two electrodes is coagulated. Because the heat is limited to the growth this method has the same disadvantage as that of the galvanic type. When the two electrodes are of the same size it is known that the temperature rise of the tissue between them is uniform, but the heat is generated first at a point midway between the two electrodes. If one electrode is larger than the other, the temperature rise becomes greater near the smaller electrode. If a very large displacing electrode is used, and care is taken to apply it properly to the skin, and the other electrode is in the form of a point, all the heat will be in the tissue near the small electrode. This method of generating heat in the tissues and controlling it, is the ideal way in which to use the high frequency current for the treatment of cancer.

Since it is the effect of heat that is important in the treatment of cancer, it is well to consider its action upon the cancer cell, and also the effect of its production in the tissues by the use of the high frequency current. In referring to Dr. Percy's observations, it is proper to give him the honor and credit for having found that in applying heat in low temper-

atures the growth of cancer cells was inhibited and the cells themselves destroyed. In 1913 Dr. Percy made his first experiments by heating cancer of the uterus, by introducing into the uterine cavity a hot soldering iron. It was nearly two years later that his first results were published. He found that by raising the temperature of cancer cells to 113 degrees Fahrenheit and maintaining this temperature for ten minutes, enough heat was generated to stop the growth of these cells. In order to measure the amount of temperature rise in the tissues heated by the action of the high frequency current, I made some experiments with raw beef. A piece of this five inches square, was placed upon a large metal electrode which was attached to one terminal of the d'Arsonval current, and a Percy blade attached to the other terminal of the current and introduced into the meat. The thermometer was introduced into the meat, one inch to the side of the blade electrode, but not in a direct line between the two electrodes. Another thermometer was introduced two and one-half inches from the electrodes. Before starting the current, the beef had been raised in temperature to 98 degrees Fahrenheit. Five minutes after the current had been turned on, the first thermometer registered 140 degrees; and the second, at a distance of two and one-half inches, registered 125 degrees. In ten minutes the second thermometer registered 135 degrees; and in fifteen minutes, 140 degrees.

The current was then turned off and the cooling process watched at the second thermometer. In eight minutes, the temperature dropped to 135 degrees; in thirteen minutes, to 130 degrees; in nineteen minutes, to 125 degrees; in twenty-five minutes, to 120 degrees; and in thirty-two minutes, to 115 degrees. During the fifteen minutes that the current was on, the meat was cut by the electrode to a depth of one and one-half inches for two and one-half inches in length. The boiling fat around the electrode registered 190 degrees Fahrenheit, and the hot wire milliampere meter, registered 1,600 milliamperes. From these observations it shows that by coagulating the healthy tissues around the malignant growth, it is possible to completely sever the growth from the surrounding tissues, and also to generate sufficient heat in the surrounding tissues to destroy all cancer cells for a distance of more than two and one-half inches.

The technic used for the treatment of cancer by heat depends upon the stage of the malignant disease.

Patients should be encouraged to have neoplasms and scars treated because, under the influence of trauma, they may take on malignant growth. Scar tissue may be made pliable and less irritant by irradiations of the Roentgen ray. Moles or papillomata, either from cutaneous or mucus surfaces, and leukoplasia of the lips or tongue, should be removed, without scarring by desiccation. Scar tissue, such as is found following scirrhus ulcer of the stomach, should be excised and ulcers cauterized by heat. Scars and ulcers of the uterine cervix, and lumps in the breasts along the milk ducts, may be removed by monopolar coagulation. By this prophylactic treatment, some cancers might be prevented.

In its early stage cancer is local, and if removed at this time, a complete cure will result. The second stage of cancer is that in which some of the cells have extended into the surrounding tissue, along the lymph channels, into the lymph nodes or along the blood channels. Just when the migration of the cancer cell takes place is not known. It is, therefore, important to treat all cancers as if they were in the second stage.

The proper way to remove cancer, either in the first or second stage, is by electro-thermic coagulation, using the bipolar method. The technic for this treatment consists in applying a large metal discharging electrode upon the fleshy part of the back and attaching it to one pole, and then attaching a small blade electrode to the other pole and completing the circuit by introducing the blade into the tissue. The growth is first outlined by the blade electrode, keeping well outside and in the apparently healthy tissue. The next step is to extend the outline deeper into the tissue until the coagulation has extended all around the growth, thus completely enucleating it. This is accomplished with very little or no bleeding. The coagulated surface remaining on the normal tissue will slough away in from ten to twenty days, leaving a granulating surface which will require from two to four weeks for healing; the length of time depending upon the size of the area treated.

If there are palpable metastases in the lymph nodes, they may be exposed by incision through the skin, and removed by coagulation.

In the third stage of cancer, when the metastases have ex-

tended into the distant organs, or even into the skeletal system, the disease has become general, and there is no known treatment that will result in a cure. In this stage heat, Roentgen ray and radium therapy may be used, but only as palliative measures.

As the cause of cancer is still unknown, the only treatment that will be successful, is the removal of the growth while it is still local.

Electro-thermic therapy seems to be the safest method by which cancer can be removed. The failure in the use of the Roentgen ray and radium has occurred by attempting to reduce too large a cancer mass.

It is, however, important in all cases where it is known that the cancer cells have extended beyond the primary mass, to precede and follow coagulation removal of the growth, by either Roentgen ray or radium therapy. This should be done even though the metastases have been removed, as cancer cells may be located between the primary and secondary growths, and at a point beyond the reach of the heat.

This therapy may inhibit the growth of the cancer cells which are outside of the tumor, and were either missed at the operation, or were beyond the reach of the heat.

If cancer is to be treated successfully, it requires the combining of those forces which have a known influence upon cancer growth. To repeat as a summary it may be stated that incision should only be used to cut through healthy tissue for the purpose of exposing a malignant growth. Thermic coagulation is used to remove the growth, and Roentgen ray and radium therapy are used both before and after operation, to reach those cells which have migrated from the primary lesion.

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A REPORT OF TWO VERY UNUSUAL CASES.**BY****N. F. LANE, M.D., F.A.C.S., PHILADELPHIA, PA.***(Read before Homœopathic Medical Society of Pennsylvania, Sept. 21, 1920.)*

WHILE the writer has not made a search of the literature for similar cases, he feels sure they must be extremely rare and for this reason this report is made.

CASE I.—Miss S., age 23, was referred for examination because she was about to be married and had never menstruated.

Her physician had made an examination and found the vagina to be practically absent, there being only a depression an inch or less in depth. She was in excellent health, with the exception of a bilateral inguinal hernia which had been present, as far as she knew, since birth. These herniae had given her little trouble with the exception of some occasional soreness.

Examination revealed a patient well developed in every respect with all the female characteristics present. One hernia contained, without doubt, an ovary; the contents of the other sac was not so evident. The vagina was rudimentary. By rectal examination a slight thickening seemed to be present where the uterus normally should be. The lateral regions were negative.

A small median incision was made for purposes of exact diagnosis. The uterus, ovaries and tubes were absent from the pelvis. A cord-like structure extended across the pelvis (broad ligaments) into the inguinal canals and the end of an ovary could be seen lying in each canal. The contents of the sac could not, however, be brought into the pelvis.

The herniae were then attacked in the usual manner from the outside and a fully developed tube and ovary, attached at one corner to a rudimentary uterus about two centimeters in length, was found in both sides, the other cornua being attached to the cord-like structure before mentioned, which stretched across the pelvis uniting the two uteri.

An effort was made to save at least one ovary, but after repeated trials both tubes and ovaries were removed. It seemed impossible to preserve the blood supply to the ovaries and at the same time to effectually close the hernial openings.

One ovary was implanted in the abdominal wall beneath the fat.

The patient made an uneventful recovery, but will likely give up the idea of marriage. An attempt to make an artificial vagina by bringing down a loop of intestine did not seem to appeal to her and I know of no other satisfactory method of making one. Personally I think she looks at the matter in a very sensible way. If the deformity had not been discovered until after marriage then an artificial vagina might be considered. It is a serious operation, one that requires considerable skill, involves the resection of the ilium and I cannot feel that the operation should be urged upon an unmarried woman.

A report from her physician five months after operation says she is in good health and *not* suffering from symptoms of the menopause. This seems to prove that the ovary implanted in the abdominal wall has taken up its function and is supplying its internal secretion. It is unfortunate that the specimens were inadvertently thrown away.

CASE II.—Mrs. P., age 27, was referred to the writer because of pelvic symptoms following a miscarriage for which she had been curetted at a hospital near her home town.

Since agreeing to report this case I requested the patient to come to my office for the purpose of obtaining a corrected history and to make sure of certain points which would determine if the case was of special interest. This revised history has perhaps somewhat weakened my original diagnosis although I still think my first impression was correct. The history is as follows, and from this we may, perhaps, be able to form satisfactory conclusions:

The patient has one child two years of age. She menstruated last on December 1, 1919, missed January and aborted February 20th. The afterbirth was not removed until ten days later. The next day she was taken to the hospital and curetted, remaining there five days (March 6th). She went home suffering discomfort in the pelvis which continued until she menstruated on April 1st, which lasted five days. After menstruating she felt somewhat better and on April 27th went shopping. While in a store she was seized with a severe pain and the appearance of a bloody vaginal discharge and was taken home in an automobile. As the pain recurred with every attempt to move she was sent again, on May 1st, to

the hospital with a diagnosis of appendicitis. An ice bag was applied and the Murphy drip administered. All this time she was having very severe pains. Her doctor now became dissatisfied with the treatment and brought her to Philadelphia and asked me to see her.

An examination at the hospital on May 5th, revealed a large tender mass in the right pelvis which, from the history of the case, we supposed to be an abscess following an infection at the time of the miscarriage. This was a sort of snap diagnosis and would ordinarily have been correct with the history given. The diagnosis looked easy, and for this reason I suppose the history was not investigated as carefully as it should have been. When will we learn to make careful records of the history in all cases no matter how simple they may seem? We all know that a good history is as important as a physical examination. They should go together.

The patient at this time had little or no fever but did have considerable pain. Upon opening the abdomen the mass was found to be composed of clotted blood. The right tube had ruptured and the diagnosis was simple.

Now the interesting point is this: Was the patient pregnant simultaneously in both uterus and tube? I have seen pregnancies in both tubes, twin pregnancies in one tube and successive pregnancies in both tubes, but never saw one in the uterus and tube at the same time unless this be a case.

The history was investigated very carefully and the patient was sure of her dates and facts. She was positive that coitus did not take place from the time of the abortion until about April 8th or 10th. That was after the apparent normal menstruation. If her story is correct she was either pregnant in the tube at the time of her abortion or became pregnant after April 10th. This latter assumption does not seem tenable as the tube would hardly rupture from a three weeks' pregnancy.

If it was a simultaneous pregnancy the primary rupture must have occurred at the time of the abortion from the manipulations used to extract the placenta, or at the time of the curettage a few days later, and if this was the case there was an additional rupture on April 27th.

Personally I think this to be the correct solution and that the patient was pregnant in both uterus and tube at the same time.

1925 Chestnut Street.

EDITORIAL

THE VITAMINS IN MILK.

MILK is the only single article of food that fairly represents a complete diet. It contains protein, fat, carbohydrate, mineral salts, water and all of the known vitamins. It is, therefore, a perfect food for the infant, although it is not a satisfactory sole article of diet for adults, because of the absence of "roughage" and because of the bulk necessary to furnish a sufficient number of calories for an adult's daily requirements. It is an indispensable food for growing children because of its high calcium content. Children need five times as much calcium per kilo of body weight as adults, and milk furnishes this element in a readily available form. A quart of milk a day will supply sufficient lime for the normal growth of the bones and development of the teeth, provided the fat soluble vitamins are present in sufficient amount. Likewise it will ward off the development of scurvy if the antiscorbutic vitamins are present.

One of the newer facts that have recently been disclosed in a study of the vitamins in milk is the variable amounts in which these important elements are present under different circumstances. Thus Hart, Steenboch and Ellis, and also Hess, Unger and Supplee, have shown that the antiscorbutic value of milk depends almost entirely upon the fodder of the cow. "Hess, Unger and Supplee have shown that cows that had been fed for a period of three weeks on fodder which was almost completely devoid of anti-scorbutic vitamin, produced milk that was almost devoid of this factor, although of normal caloric value and adequate in fat, protein and carbohydrate content. Hess, in his present Harvey Lecture, stated that such results may have far-reaching dietary significance, and he raises the question whether 'winter milk' supplied by stall fed cows is a well-balanced and complete food. It is quite possible that it may become a part of dairy inspection to know the adequacy of the fodder as well as the sanitary conditions. It

is well known that the cows producing certified milk are not allowed to graze. It is now necessary to re-examine the conditions surrounding the requirements of certified milk with reference to this very important factor."—*M. J. Rosenau, M.D., "Vitamins in Milk," Boston Med. and Surg. Journal, May 5th, 1921.*

The effect of heat upon the vitamins of milk has been carefully studied by Rosenau, with special reference to fat-soluble A. The interesting fact is brought out by his experiments that while fat-soluble A is very resistant to heat, the anti-scorbutic vitamin is destroyed by comparatively low temperature, not even withstanding the temperature necessary to Pasteurize milk. The anti-scorbutic vitamin may also be practically absent in milk from cows that have had no green fodder in their diet. It is encouraging to learn that the canning or drying of milk does not affect its nutritive value as much as is generally supposed. On this point Rosenau expresses himself as follows: "Canned milks and dried milks, then, retain the fat-soluble A and water-soluble B vitamins in almost their original potency. The only vitamin in these preparations that may be affected is the anti-scorbutic vitamin. The amount of this in canned milk will vary with many factors, primarily, the amount in the original milk, and, secondarily, upon the process of heating and evaporation with special reference to oxidation."

C. S. R.

LEGISLATING THE SOCIETY PROGRAMME.

THE arrangement of the scientific sessions of a medical society is a matter requiring good judgment, and at the same time demands that those in charge of it, shall have in view but one object, namely, the instruction and advantage of the physicians in attendance. The human element can never be eliminated, try as we will. The parties interested are varied. One with large experience looks only upon the prosperity of the organization, and so endeavors to conform to the general principle with which these remarks are introduced. Against them is arrayed an element of inactivity or indifference on the one hand, and a pernicious element working towards self-glorification on the other. Society by-laws have been enacted to eliminate undesirable factors in society government.

These rules while obviating certain evils create others no less pernicious.

The time allotted for the reading of essays is now regulated by by-laws in most of the well-managed associations. The rule is a good one, and should be permitted to stand. Exceptions are, of course, permissible, but only under exceptional circumstances. The main one pertains to scholarly addresses when delivered by one who knows how and has the oratorical ability to retain the interest of his audience. Even these have their time limit, for audiences are but human, and are but seldom capable of listening with interest to any speaker for a longer time than 45 minutes. The admission of speakers of this class upon a programme demands nice discretion upon the part of the committee in charge. The latter must have knowledge of the speaker's habits as well as of the general interest attached to his subject. It is addresses of this class that have furnished the greatest abuse in the past. A distinguished guest is invited, and immediately takes it upon himself to assume that he is expected to speak by the quantity and not by the quality of his ideas. Perhaps he feels that he must go into details to prove his point. Indeed, it may be necessary for him to do so, the result being the communication which might have been greatly enjoyed by the audience, is converted into a tiresome sermon.

The general rules prevalent in societies placing the time limit of presentation of papers at 20 minutes is a good one. As a rule, it may be objected, that papers involving original research or academic reviews or analyses of the literature of an important subject, cannot be covered within such a compass of time; but the author is or should always be able to prepare an abstract for reading that will conform to the society rules. The time limit rule is too frequently nullified by votes of the audience granting unlimited extension, such grants being actuated more frequently by a spirit of politeness rather than by a heartfelt wish that the orator shall proceed. Societies should make it an invariable rule to enforce the time limit in the interests of both speaker and audience.

The man who has a proper conception of his subject is fully aware of the high light upon which he descants, and if he is a thorough student is as able to prepare the abstract for reading, as he was to write the original thesis. He should not under any circumstance feel that he has been treated discourte-

ously by the limitations; on the contrary, he should be pleased. Brevity is the soul of more things than wit. An orator may regard his speech as successful when he stops at a period when his audience is desirous of hearing more from him. He may feel that if he has taken the time and trouble to prepare an able essay, he should have a proper hearing. This is all well and good; but does he stop to think that at best an audience at the society session is but comparatively small; while the reader of the completed effort in the society's official organ is usually larger than that of the most capacious auditorium even in our largest cities? It is the duty of essayists, therefore, to consider both classes of physicians whom their efforts must reach. The abstract or abbreviated paper when published gives scant credit to the management of the society's journal; the extensive communication bores the audience. In the interests of all, both parties must be considered.

It is a rule of many societies that no reports or communications shall be presented in an unfinished condition. Here is a rule which is broken with too great frequency, and generally by reason of the conceit or laziness of the offending member. If a society pledges itself by admitting to its programme a place for a speaker, it is only due that society that said member shall give to it his best efforts. If he spends one half hour in the presentation of a rambling half-written paper before an audience of say fifty, it is evident that he has wasted 25 hours of human time, *i. e.*, two and a half days of working time. Usually these improperly prepared papers are "spoken" from rough notes, transcribed by the society reporter at considerable expense; and in the end are the subject of mortification to the alleged orator, whose regular alibi may be summarized in some not overly choice remarks concerning the stenographer. From the editorial standpoint, such papers (?) are anathema.

There are some men with rare skill as extempore (alleged) talkers, possessed of the gift of clearly cut verbiage. Even these should be debarred from the programme. The majority of good speeches belonging to this class have been prepared long in advance, and are made pleasurable to an audience owing to the practice which their authors have had in repeated presentation. Some of these speeches have been delivered on numerous occasions and over an area of many thousand square miles, and when the time comes for their publication it

may be truthfully said that the subject matter is threadbare and antiquated. Nobody but the neighborhood man takes an interest in them; the men who spend time and good money to travel a distance to attend the meeting feel that they have been deceived.

Discussions are probably abused more frequently than are the papers. Quite wisely our lawmakers have placed a time limit upon these. Unfortunately much of the time assigned is deliberately wasted. Many debaters begin by stating that they do not know that they have anything to say concerning the subject in hand, and that they really know nothing about it. Then they proceed to prove their lack of veracity on the one hand by talking a lot; and then again with true human perversity launch into an harangue which proves their truthfulness when at the opening they acknowledged their ignorance. Time is, furthermore, wasted in well meant but silly adulation of the essayist. Fortunately, the popular sentiment in well regulated societies is abating these evils, and the experienced attendant upon meetings who traverses the rules of common sense, is getting to be unusual. Audiences are better pleased when speakers plunge into the subject at once without preliminary words. A perennial nuisance curable only by death or murder is the attendant who feels himself able to speak upon any and all subjects. Such individuals deserve our pity rather than our objurgations in that they honestly believe that no society meeting can be complete without a few *timely and well chosen* remarks from them. Their desire to speak is so well known that chairmen with more politeness than good judgment seeing such individuals in the audience single them out for a speech. Many of them fail to speak to the subject of the paper, and skillfully turn the matter in hand to something concerning which the author had no desire to invite attention, and a complaisant chairman fails to protect the audience by enforcing the rules.

It is an old adage: "If you have nothing to say, say it. Don't talk about it."

GLEANINGS

MEDICINE

Conducted by CLARENCE BARTLETT, M. D.

PRURITUS ANI.—Discussing this subject before the Royal Society of Medicine, Lockhart-Mummery distinguishes the following types: (1) those due to some general condition, such as glycosuria, etc.; (2) those due to some parasite, such as worms, pediculi, etc.; (3) pruritus obviously secondary to some lesion of the anal region, such as fissure, prolapsed pile, etc.; (4) pruritus of old standing where no local lesion can be discovered; (5) paroxysmal pruritus. A local cause for the itching was present in a great majority of cases, and the first essential was to make a thorough search for this cause.

General treatment such as dieting, non-smoking, total abstinence and so forth, the author did not believe in. We ought to try to cure the condition and not to make the patient a slave to his anal region. Rigid attention to local cleanliness and dryness was very important. Lotions and powders were better than ointments. Any local cause, such as fissure, ulcer, pile, hypertrophied papilla, etc., should be removed, and it was often advisable to investigate the anal region under an anæsthetic.

The treatment as to vaccines, the author regarded as unreasonable. Antiseptics, such as alcoholic solution of iodine, might be used.

In the discussion that followed, McLeod referred to cases that had been produced by coffee, red wines, the free use of condiments and so on. He also spoke well of x-ray treatment in selected cases. Watson said that certain cases were medical rather than surgical. Such were those which occurred in neuropathic individuals or patients with an hereditary tendency-functional cases. He instanced the condition occurring in father and son. Baldwin and Feldman referred to catarrh of the bowels as the cause of some cases. Cope referred to cases of a paroxysmal nature and compared these to asthmatic seizures. He also reported cases which had been subjected to skin tests, and reacted to pork and potato, and the taking of or abstention from pork or potato brought on or alleviated the condition.—*The Lancet*, April 23, 1921.

DIAGNOSIS AND SIGNIFICANCE OF TRACHEOBRONCHIAL ADENOPATHY.—Ray M. Balyeat, summarizes the above subject as follows: A positive D'Espine sign is indicative of enlarged glands at the root of the lungs.

Enlarged tracheobronchial glands may be due to any one of several causes, the chief of which is an infection by the tubercle bacillus.

If tonsillitis, whooping cough or measles causes enlarged tracheobronchial glands, they are usually not of sufficient size or density to give a positive D'Espine sign.

Chronic bronchitis will produce enlarged tracheobronchial glands which can be differentiated from a tuberculous hilum by means of the roentgenogram.

A positive D'Espine sign found in a poorly nourished child is evidence of a tuberculous infection of the hilum.

The degree of the infection can be determined by the roentgenogram.

Weight below standard is very common in children with a chronic tuberculous infection.

A child with a massive chronic tuberculous infection is a candidate for active tuberculosis, and should be watched carefully for early signs and symptoms.

In chronic tuberculous infections in children, few signs can be elicited by physical examination.

The degree of the infection in childhood is an important factor in determining whether or not a child will develop active tuberculosis in adult life.

Every child should have a thorough physical examination with the idea of determining if possible whether or not there is a tuberculous infection of the chest, and if so, how heavy.

Those with evidence of massive infections should be taught how to live and should be instructed in the signs and symptoms of early tuberculous activity. If this were done, the number of advanced cases of pulmonary tuberculosis would be greatly reduced.—*Journal of the American Medical Asso.*, April 9, 1921.

SYMPTOMS OF PROLONGED FOREIGN BODY SOJOURN.—From his vast experience in the study of this subject, Chevalier Jackson has formulated the following schema:

1. The time of inhalation of a foreign body may be unknown or forgotten.
2. Cough and purulent expectoration ultimately result although there may be a protracted delusive symptomless interval.
3. Periodic attacks of fever, with chills and sweats and followed by increased coughing and the expulsion of a large amount of purulent, usually more or less foul material are so nearly diagnostic of foreign body as to call for exclusion of this probability with the utmost care.
4. Emaciation, clubbing of the fingers and toes, night-sweats, hemoptysis, in fact all of the symptoms of tuberculosis are in most cases simulated with exactitude, even to the gain in weight by an outdoor regime.
5. Tubercle bacilli have never been found in the Bronchoscopic Clinic associated with foreign body in the bronchus. It was the only element lacking in a complete clinical picture of advanced tuberculosis. A point of difference was the rapid recovery after removal of the foreign body.
6. The erroneous statement in all of the text-books that foreign body is followed by phthisis pulmonalis is an heirloom of the days when the bacillary origin of true tuberculosis was unknown, hence the foreign body phthisis pulmonalis or pseudotuberculosis was confused with the true pulmonary tuberculosis of bacillary origin.
7. The subjective sensation of pain may allow the patient to localize a foreign body accurately.
8. Foreign bodies of metallic or organic nature may cause their peculiar taste in the sputum.
9. Offensive odored sputum should always suggest bronchial foreign body; but absence of sputum, odorous or not, should not exclude foreign body.
10. Sudden complete obstruction of one main bronchus does not cause noticeable dyspnea provided its fellow is functioning.
11. Complete obstruction of a bronchus is followed by rapid onset of symptoms.

12. The pleura is rarely involved. Rib resections done for supposed empyema have with one exception shown no pus.

13. The physical signs usually show limitation of expansion on the affected side, impairment of percussion, and lessened transmission or absence of breath sounds distal to the foreign body.

14. The "asthmatoïd wheeze" may, if present, be of great diagnostic value. Its absence, however, does not negative the presence of foreign body.

15. All cases of chest disease should have the benefit of a radiographic study to exclude bronchial foreign body as an etiological factor, and negative opinions should never be based upon any plates except those of the utmost perfection that the wonderful modern development of the art and science of roentgenology can produce. In doubtful cases, the negative opinion should not be conclusive until a roentgenologist of long and special experience in chest work has been called in consultation. Even then there will be an occasional case calling for diagnostic bronchoscopy.

16. Symptoms of pulmonary abscess, or other lung disease, even cough, following within a few weeks of the extraction of teeth, call for the exclusion of foreign body in the lung.—*The American Journal of the Medical Sciences*, May, 1921.

PAEDOLOGY

Conducted by C. S. RAUE, M. D.

REMOVAL OF ADENOIDS IN INFANCY.—Tod states when removing adenoids under the age of 6 months, especially if the baby is undersized or ill-developed a general anesthetic is neither required nor advisable. The infant is held in a sitting position by a nurse, a small curette is passed up behind the soft palate into the postnasal space and brought down with one sweep. Owing to the small size of the postnasal space, it requires but a tiny pad of adenoids to give rise to symptoms, but in some cases one is surprised at the amount of adenoids removed. As a rule, very little bleeding takes place, and there is rarely any shock, but the infant should be kept warm, and if there appears to be any shock, should be given a drop of brandy in a little milk. It is advisable not to feed the infant for three hours before the operation takes place, so that it can be given the breast or bottle within ten minutes or so after the operation has taken place. He has frequently performed this operation on infants, the youngest of which was but three weeks old, and he has never observed any harmful results in consequence. On the contrary, almost immediate benefit will be noted, as the child soon begins to breathe normally through the nose and to suck with comfort; otorrhea and bronchial symptoms, if present, rapidly disappear, and the weakly infant thrives and becomes strong. For these reasons he strongly urges that adenoids should be removed, no matter how young the infant may be, whenever they give rise to any symptoms which may adversely affect its immediate or future welfare.—*Therapeutic Gazette. Archives of Pediatrics*, April, 1921.

THE PSYCHOLOGY OF THE CARDIAC AND THE DOCTOR.—Children with heart disease have varying degrees of a specific physical deviation from the normal and, frequently in addition, certain general, acquired, mental, social, educational and environmental differences.

These children frequently showed a certain diffidence and lack of initiative, a disinclination to associate with others; often, too, a moderate lower grade of school knowledge and a certain eager readiness to attribute their backwardness and inefficiency to the possession of heart disease, the statement often accompanied by a significant gesture of the hand toward the left breast. These general deviations in behavior were derived from 3 sources; the family, friends and teachers; others with heart disease; and the family physician.

Unfortunately, popular tradition makes and knows no distinction in degrees or forms of the disease. Knowing the importance of the organ to the life of the individual and having heard of some persons who died suddenly, they are often so impressed, that their constant fear is that some slight infraction of a physician's directions against physical exercise will be penalized by sudden death. So all-pervading is this fear, that relatives and friends converse concerning the child with heart impairment in whispered voice accompanied by significant shrugs of the shoulders, raisings of the eye-brows, and noddings of the head.

The disappointment from disability to accomplish one's desires in life because of acute exaggeration of symptoms, such as dyspnea, cervical or breast pain, cyanosis or swelling of the legs, may justifiably cause in a patient apprehension and fear for the future enjoyment and productivity of his life. These organic damages force on the individual child the necessity of a physical adjustment to lessened physical activity at a time when the physical body is making its most rapid development. The detailed relation by one cardiac to another of symptoms, sensations, failures and fears may be the means of increasing a hopelessness, entirely unwarranted, since the name of the organic damage, while being the same, may not be of like degree, and the restraints, advised for one cardiac, often are not necessary* to impose upon another.

The more one sees of heart disease in children the more hopeful he may become; for the cardiac condition of most children under proper supervision improves very rapidly, much more rapidly than one would anticipate. The greater number of damaged hearts are of a mild degree and live for the most part a natural, physical, active life.

The doctor, frequently, is responsible for unnecessary medicine and undue restrictions, because he does not thoroughly study the patient and his limitations, but rather treats all cardiacs as hopeless cases with the implication of imminent early death.

The child can and will adjust itself to restrictions, if it has some substitute method of occupying its physical energies, as well as satisfying its mental desires.

The cardiac child reacts to environment and is stimulated by group work to rapid development, mentally and physically.

Physical exercises properly directed in games, dancing and occupations, will help to improve the cardiac muscle and the mental attitude of temperament of the child.

Gathering cardiac children in groups does not produce hypochondriacal depression but rather stimulates a rational cheerfulness. The individuals learn to discriminate and differentiate between the severity of their conditions. The individual improvements are noted, and the whole group derives encouragement.—*Archives of Pediatrics*, February, 1921.

INFANTILE SCURVY FOLLOWING THE USE OF RAW CERTIFIED MILK.—Harold K. Faber, M.D., San Francisco. An infant fed almost from birth on modified raw certified milk, to which small amounts of sodium citrate were added, developed scurvy at the age of 6 months.

It is impossible, but not proved, that sodium citrate may have partly destroyed the antiscorbutic vitamin.

The use of sodium citrate in infant feeding over long periods should be provisionally regarded as dangerous.—*Amer. Jour. Diseases of Children* April, 1921.

DERMATOLOGY

Conducted by RALPH BERNSTEIN, M. D.; F. A. C. P.

THEORY OF CANCER.—According to Clarke, who agrees with some of Paine's views, the degeneration of the cell is not directly caused by inflammation or other form of irritation, but is the result of an effort to respond to the destructive effect of inflammation prolonged beyond the regenerative powers of the tissue; such power being not unlimited and varying in different tissues according to their "normal" necessities, and varying in different individuals.—*Journal American Medical Association*.

INFECTIOUSNESS OF HERPES ZOSTER.—As the evident result of a specific virus, Bacmeister reports two cases of herpes zoster that occurred within two or three days after exposure through shaking hands with the same patient who had been released from a hospital during the height of the eruption.—*Journal American Medical Association*.

TREATMENT OF RINGWORM.—Hughes' method of treating ringworm is to shave the affected area, wash thoroughly with soap and water and finally ether, and then paint the part with tincture of iodine. When thoroughly dry the painted area is sprayed with ethyl chlorid. The active agent is the small amount of ethyl iodid formed. The treatment is repeated twice weekly, and the average duration of treatment does not exceed a month for the scalp cases, while in body cases it is even shorter.—*British Medical Journal, London*.

PURPURA IN INFANTS.—Nobecourt and Mathieu encountered five cases of purpura in a recent series of 938 infants at the maternity. The most frequent cause is inherited syphilis, next is the pneumococcus or meningococcus septicemia, but in a number of cases it is impossible to detect the cause. There are the fulminating, the acute forms, with negative bacteriologic findings. They never found syphilis responsible for purpura in older infants, and older infants do not present the hemorrhages in mucous membranes and viscera which are common in purpura of the newly born. Specific treatment and specific serotherapy must be early and intensive. Antipneumococcus serum, which has given fine results in treatment of pneumonia and pleurisy in infants, might prove useful in pneumococcus purpura.—*Paris Medical*.

TREATMENT OF ACNE.—The prevention of comedone formation and the control of underlying factors where possible are the indications for treatment

according to Highman. Incidental indications are the treatment of the scalp and the expression of the pustules and the comedones. The general treatment consists of regulating the diet by cutting down the starch and sugar intake and by promoting intestinal function. To prevent comedone formation the use of the roentgen ray is recommended. No local treatment is necessary at home. Vaccines promise nothing. The major indication is the treatment of the skin. One Holaknecht unit applied to the face weekly for from ten to sixteen exposures will cure the average case of acne, and in case of recurrence, two or three exposures will prove effective.—*New York Medical Journal*.

CRYOTHERAPY IN DERMATOLOGY.—A carbon dioxid snow container in which the carbon dioxid is mixed with acetone had been found by Lortat-Jacob to be the most convenient of all the forms of applying extreme cold to the skin for therapeutic purposes. The refrigerant action is more pronounced than with the snow alone. The temperature is the same for both; the tip of the snow pencil is always surrounded by a layer of gas which impedes its cryotherapeutic action. This is not the case with the acetone-snow cryocautery, the copper tip registering minus 80 C. He gives a number of illustrations showing the complete disappearance of epitheliomas, angiomas on infants, nevi, keloids, nodular folliculitis, and roentgen ray dermatitis, without any scarring whatever, and he regards it as superior to all other measures for the latter condition.

ROENTGENOLOGY

Conducted by WALTER C. BARKER, M.D.

X-RAY FINDINGS IN THE CHRONIC GAS CASES.—Pillsbury gives a description of the action of the three important gases affecting the lungs:

He states that mustard gas does not affect the respiratory tract. Chlorine gas is very irritating and affects the larynx, trachea and bronchi. Chloropicrin disintegrates in the presence of moisture, which is found in the medium sized branches of the bronchus. Here hydrochloric acid is given off, which affects these branches. Phosgene is more stable than chloropicrin, and reaches the bronchioles and alveoli before giving up hydrochloric acid. Large amounts of any of the gases being inhaled may affect the whole respiratory tract.

The effect of gasing, as it appears on the roentgenogram, is to cause a uniform thickening of the branches of the bronchi, extending from the roots of the lungs, with a greater density at the base of the middle lobe upon the right side and the base of the upper lobe upon the left side. In severe cases there may be local areas of atelectasis and emphysema.

The appearance of the effects of gas may be differentiated from that of pneumoconiosis, by the fact that the roots are not thickened and there are no small dense areas scattered throughout the lungs. This condition is also different in appearance from that of tuberculosis, because there are no areas of consolidation or infiltration.—*American Journal of Roentgenology*, April, 1921

OBSERVATIONS ON THE BEHAVIOR OF THE NORMAL PYLORIC SPHINCTOR IN MAN.—Previously, the experimental studies on the physiological factors influencing the motor functions of the gastro-intestinal tract, have been

carried out in animals. It follows that a more intimate knowledge of the physiology of the digestive tract, and a better interpretation of the pathological physiology of the human digestion, would be obtained, if the motor function of the normal stomach of man were studied.

Cannon elaborated the theory of the acid control of the pyloric sphincter in animals; that is, that acid in the pyloric antrum of the stomach causes the sphincter to relax, while the presence of acid in the duodenum causes the sphincter to contract.

In 1913, Cole demonstrated that the quiescent sphincter is in the state of contraction, and that it is open only when liquid food is in the stomach; and while the peristaltic wave is advancing toward the pylorus; and that it is closed during the relaxation of the peristalsis. Cole also called attention to the regular intervals in which these waves advanced and the pyloric sphincter opened.

McClure and Reynolds made their experiments with solid foods and examined separately, first a diet of carbohydrates, and then one of proteids and lastly one of fatty foods. They observed that the pyloric sphincter opened at regular intervals and remained open while the peristaltic wave is moving toward the sphincter, and closed as soon as the wave relaxed, which was just as Cole had described for liquid food. These foods began to leave the stomach in from three to ten minutes after they were swallowed.

It was also found that there was no change in the opening or closing time of the pyloric sphincter, when either acid or sodium hydrate were introduced into the duodenum. The experiments were made at various times during the peristaltic cycle, and with solutions of different strengths.

The results of these experiments offer evidence that acid is not the principal factor controlling the opening and closing of the pyloric sphincter in man.

FOREIGN BODY IN THE BRONCHUS FOR FIFTEEN YEARS.—Hirst calls attention to the relative tolerance of the bronchi to a metallic foreign body, so strikingly in contrast to the immediate reacting which follows upon the entry of a vegetable foreign body.

The history of this case shows that fifteen years ago the patient swallowed a dime; after which he had severe coughing for about ten minutes. For the next six months there was a sensation of something moving up and down in the chest. From that time until six months ago there were no symptoms. Six months ago, there was coughing and blood spitting. At the present time there was a severe hemorrhage which brought the patient to the hospital. The roentgen examination shows a complete atelectasis of the left lung, with extensive fibrosis at the base of the lung, drawing the mediastinal contents to the left. A shadow of a metallic disc shows in the left bronchus.

At the operation for the removal of the dime, a severe hemorrhage occurred, and this caused the patient's death.—*American Journal of Roentgenology*, April, 1921.

PATHOLOGY

Conducted by JOHN G. WURTZ, M.D.

METABOLISM IN PELLAGRA: A STUDY OF THE URINE.—Sullivan, Stanton and Dawson, (*Arch. Inter. Med.*, April, 1921, p. 387) give a report of their studies as to the metabolism in pellagra. In spite of all the theories it is

generally accepted that pellagra is a disease due to metabolic disturbances, in so much as the quality and quantity of the diet play a large part in the prevention, causation and cure of the disease. These writers review the observations of others and tabulate and discuss their own studies of the urine in pellagra at the United States Pellagra Hospital, Spartansburg, S. C.,. They summarize their observations about as follows: The low phosphorous excretion in active pellagra, even with a generous diet, seems to indicate faulty mineral metabolism. There is present a heightened putrefactive process in the intestine, as evidenced by the amount of indican in the urine, fecal retention and the presence of active putrefactive flora in the stools. Signs of kidney involvement were found in about fifty per cent of the cases. The total nitrogen of the urine was low, the urea ratio in general was low, suggesting hepatic insufficiency. The ratio for the ammonia nitrogen and the undetermined nitrogen was heightened. That the metabolism level was low during the active stages of the disease was shown by the low excretion of uric acid and creatinine. Utilization of protein was found to be below normal even after several weeks of remedial diet. After at least a month on the curative diet, the urinary ingredients, the urea ratio and the ammonia found the normal levels.

HYPERGLYCORACHIA IN EPIDEMIC ENCEPHALITIS.—Foster (*Jour. Amer. Med. Asso.*, May 7, 1921, p. 1300) found that in encephalitis there is an increase of sugar in the spinal fluid and that this increase apparently bears a definite relationship to the intensity of the disease, though it has no relationship to its duration. A study of the urine and blood failed to reveal a glycosuria or hyperglycemia. All other spinal fluid findings are variable in this disease, so as far as Foster's observations go, it appears that a hyperglycorachia is the only characteristic finding.

ONE THOUSAND ONE HUNDRED FORTY-SIX GOITERS IN ONE THOUSAND SEVEN HUNDRED EIGHTY-THREE PEOPLE.—Levin (*Arch. Inter. Med.*, April, 1921, p. 421) investigated the occurrence of goiter in a certain locality in Michigan. He recognizes three distinct groups of thyroid enlargement; simple, adenomatous and colloid. The proportion of exophthalmic goiters was comparatively small. Of 790 males, 44.9% had goiter, and of these 29.1% had simple goiter, 15% adenomatous and 0.76% colloid. Of 993 females, 79.6% had goiter; 45.5% simple, 30.3% adenomatous and 3.8% colloid. In about 22 to 26% of these persons the goiter commenced at the first year. The percentage increased in both sexes toward puberty; but much more in females. The liability of goiter developing in persons born in the district is greater than others. Levin, with all his investigation, is not prepared to state that infection plays an etiological role.

FATE OF THE LYMPHOCYTES.—Bunting and Huston (*Jour. Exper. Med.*, May, 1921, p. 593) have taken a step toward solving the problem of the lymphocytes. By experimental work with animals they have shown that more lymphocytes enter the blood in twenty-four hours, via the thoracic duct, than appear in the circulation at any one time. The question is, "What becomes of these cells?" Modern hematological studies disprove that they are converted into other cell types. With this fact in mind these workers have shown that the lymphocytes, in all probability, migrate from the blood

channels toward the surface, rather than become disintegrated in the circulation. By histological research they have found that the lymphocytes in animals, migrate from the blood vessels into the mucous membranes and through them to the surface. This migration is chiefly in the gastro-intestinal tract.

UROLOGY

Conducted by LEON T. ASHCRAFT, M.D.

THE SURGICAL TREATMENT OF MALIGNANT TUMORS OF THE BLADDER: RESULTS OF OPERATIONS.—E. S. Judd and W. E. Sistrunk, *Journal of the American Medical Association*, 1920. The greatest danger and difficulty in radical surgery of the bladder is infection of the field of operation. The segment of bladder is removed from an area which lies in a dependent pocket from which it is difficult to establish satisfactory drainage. It is therefore imperative that the technique be carried out as accurately as possible. This necessitates large incisions with free exposure and ample protection of the involved tissue.

Malignant tumors of the bladder are usually either papillary epitheliomata or carcinomata. Papillary tumors may be either benign or malignant. It is always advisable to make a microscopic examination of a section of the tumor as the type of papilloma is very important in determining the treatment. Satisfactory results may be obtained with fulguration in cases of benign papillomata, while malignant tumors should be excised. If the tumor is small and there is doubt as to its malignancy, it is best to try fulguration as long as improvement takes place. The growth should be observed carefully during this treatment, however, and if it progresses, fulguration should be stopped and excision performed early.

Carcinomatous tumors of the bladder are of two types: (1) the superficial ulcerating growth which is slow growing and slow to metastasize, and (2) the large, hard ulcerated carcinoma which penetrates the perivesical adipose tissue and is also slow to metastasize.

Early perivesical involvement before there is evidence of metastasis was a striking feature in the series of cases reviewed. If some method were devised to reduce the local recurrence, the results would be better than those obtained by operation for cancer in other regions.

Usually operation is contra-indicated when there is remote metastasis and when the growth is attached to the rectum or involves the base of the bladder, the prostate, and the seminal vesicles. In selected cases, however, it seems best to remove the entire bladder.

About 90 per cent. of all tumors of the bladder originate close to the ureteral meatus. Frequently the meatus is involved and the ureter is partially or completely blocked. When it is necessary to remove the meatus and a portion of the ureter, the ureter should be reimplanted into another portion of the bladder if the kidney function remains, or ligated and dropped back if the kidney is functionless.

Patients should be followed closely during the first two years after operation and should be re-examined at the first suggestion of further recurrence. If a recurrence is present treatment by repeated fulguration should be given.

The results obtained with the use of the knife and the cutting cautery

are apparently the same. The good results obtained with the Percy cautery in cases of non-removable tumor indicate that it should be used more often than it is. One of the authors' patients remained well as long as six years after treatment with the Percy cautery.

The hospital mortality in the authors' 202 cases was 12.9 per cent. Thirty-four of the series were explored and found inoperable. Some of these were treated later by x-ray and radium and a number were benefited. Such treatment, however, was not applied in the effective manner in which it is given today.

If it can be shown that radium has the same favorable effect on epithelioma of the bladder as on the cervix, it will be best to preform a suprapubic cystostomy to afford drainage relief from infection and to place the radium in direct contact with the epithelioma. One argument against the use of radium and fulguration is that both may be formed. Radium should be reserved for inoperable malignant tumors and fulguration for definitely benign tumors. If the radical operation is performed in suitable cases the immediate and ultimate results should be very good.

CHRONIC URETHRITIS.—I. S. Koll, (*American Journal of Surgery*), points out that there are many factors which predispose to chronic inflammation of the urethral mucous membrane, as follows:

1. Lowered resistance subsequent to gonorrhea.
2. Uncleanliness.
3. Constipation.
4. Secondary to inflammations of prostate and vesicles and urinary bladder.
5. Traumatic (falls and blows, "stormy coitus," so-called "strain").
6. Mechanical (instrumental).
7. Chemical (alcoholism, phosphaturia, hyperacidity, concentrated irrigating solutions).
8. Thermal (too hot irrigating solutions).

The importance of diagnosis lies in the recognition of the cause of the existing or persisting discharge by localizing the pathology on the one hand, and determining the etiologic factor on the other.

For localization of the active lesion the urethra must be explored by the endoscope and the cysto-urethroscope.

Chronic urethritis must be differentiated from urethrorrhea and prostatorrhea.

A primary non-gonorrheal urethritis does not often become chronic, but may be due to the influence of one or more of the pyogenic bacteria gaining entrance to the urethra through its lowered resistance following a gonorrheal infection. The bacillus coli and the staphylococci in combination are more resistant to treatment. They may be exterminated and the mucous discharge may still persist until the lesion producing it is localized.

In considering treatment the patients should be divided into three groups: (1) Those in whom the urethral affection is a simple diffuse chronic hyperemia, with slight epithelial exfoliation, manifested by shreds in the urine; (2) those who upon urethroscope examination show localized lesions along the urethra such as fissures, ulcers, granulations, etc., utriculitis and verumontanitis; (3) those in whom the prostate or seminal vesicles or both are the offenders.

For the first group, the passage of sounds followed by instillations of silver nitrate $\frac{1}{4}$ -1 per cent. and massage of the urethra is the program to be carried out.

Any of the localized lesions in the second group should be touched with silver per endoscope, beginning with 10 per cent. and ending with 25 per cent. or even the pure stick made into small molds and carried by the Young porte caustique. For gaping Littre glands and for any involvement of the utricule direct injections of 1 per cent. to 3 per cent. silver are made with the Geraghty syringe.

For the third group, systematic stripping of the vesicles and massage of the prostate should be carried out. This can be followed by deep instillations or irrigations. When, after a reasonable time, these conservative measures fail, vasotomy should be performed (in the author's experience satisfactory results are obtained in 75 per cent. of cases).

SURGERY

Conducted by J. D. ELLIOTT, M.D.

THE RESULT OF SURGICAL TREATMENT OF EPITHELIOMA OF THE LIP.—Sistrunk has studied all of the cases of epithelioma of the lip, which were operated in the Mayo clinic during the years 1912, 1913 and 1914.

In these cases the glands beneath the chin were removed when possible, preferably simultaneously or prior to excision of the primary growth. When these glands were found to be involved a block dissection of all the glands on that side of the neck was performed. To be complete the omohyoid and sternomastoid muscles were removed and the spinal accessory nerve sacrificed.

It was possible to follow up 136 patients and these were divided into three groups. Group 1 comprised ninety-eight cases in which the glands were removed but were found to be not involved. 90.3 per cent. of these patients are alive from five to eight years, 6.4 per cent. are known to have died of recurrence. Local recurrence occurred in 12 per cent. and glandular recurrences in 3.2 per cent. of those living.

In group 2 the glands were found to be involved at the time of the operation. In six patients a block dissection was made and five of them have died. In five a block dissection was deemed inadvisable and four of these are dead. Only 18.1 per cent. of patients with glandular involvement at the primary operation have survived five years.

Group 3 comprised those patients in whom the growth only was excised, usually on account of the age or physical condition. Deducting three patients who have died of other causes, 79.2 per cent. are alive. 38.4 per cent. of those alive have had local recurrences which were subsequently removed. Of the five patients who died, two had local recurrences and three had recurrences in the submaxillary glands.

The author calls attention to the high percentage of local recurrences which can probably be avoided to a certain extent by wider removal and post-operative use of radium.

He condemns treatment of the growth by radium and x-rays alone. Experience has shown that glandular metastasis occurs in 20 per cent. to 30 per cent. of those cases in which no local recurrence takes place.—*Annals of Surgery*, May, 1921.

THE USE OF THE DUODENAL TUBE IN THE PRE-OPERATIVE STUDY OF THE BACTERIOLOGY AND PATHOLOGY OF THE BILIARY TRACT AND PANCREAS. Whipple compares the operative findings with those obtained by the injection of magnesium sulphate into the duodenum (Lyon's method) prior to operation in twenty-five cases. The tests were made with extreme care and the pathology of the gallbladder, ducts, etc., were carried out in a corresponding manner.

The author believes that the duodenal tube findings, taken with the history and physical signs, bid fair to be of real service in localizing the lesion and determining the pathology before operation. If, after magnesium sulphate instillation there occurs a rapid flow of thick, dark green bile, "B" bile, the cystic duct may be considered patent and the walls of the gallbladder contractile. If this bile contains much mucus, numerous epithelial cells, leucocytes and intracellular bacteria, but few cholesterol crystals, a chronic cholecystitis without stones is the probable lesion. If, in addition to the last mentioned findings, cholesterol crystals microscopically are numerous and the bile feels gritty, calculi are also present. If there is no "B" bile, but there is a history of biliary colic with marked tenderness in the gallbladder region with or without palpable mass, the cystic duct is closed as a result of calculus or the edema of an acute or subsiding cholecystitis. If there is no "B" bile, but the bile following magnesium sulphate instillation contains many intracellular bacteria and leucocytes, an infection of the common duct as well as cholecystitis may be diagnosed. If in a jaundiced case there is no bile in the duodenal contents showing pancreatic ferments, common duct obstruction above the papilla is surely present. The duodenal tube is not an essential factor in the diagnosis of biliary and pancreatic cases, but it is fair to say that it gives information that permits of a more detailed and accurate diagnosis. The method can by no means take the place of a careful history analysis or thorough physical examination. All three should be considered in the diagnosis of this class of patients.—*Annals of Surgery*, May, 1921.

CHRONIC DUODENAL OBSTRUCTION WITH DUODENO-JEJUNOSTOMY AS A METHOD OF TREATMENT.—E. L. Kellogg and W. A. Kellogg wish to emphasize the importance of this condition, to summarize our present knowledge concerning it, to enlarge upon the technic of duodeno-jejunostomy and to report a series of successful cases. The findings in forty-one of these are tabulated and seven are given in detail. The entire subject is thoroughly discussed and among the deductions are the following: Chronic duodenal obstruction occurs more commonly than is realized and can often be diagnosed from the history and physical signs. The obstruction may involve the first or second portions of the duodenum only, due to ulcer, or gastropexia or adhesions; or the entire duodenum, most frequently caused by compression between the vertebral column behind and the superior mesenteric artery in front, especially when there is traction in the direction of the pelvis from the drag of a distended and ptosed cecum and colon. The physical signs of obstruction in the first portion are those of pyloric obstruction. When the second and third portions are involved it can often be made out by percussion and succussion. X-ray frequently fails to show duodenal obstruction, but may be rendered more effective if a special technic is used. The symptoms are those of epigastric discomfort and toxic manifestations. With a competent pylorus, cramp-like pains predominate; when incompetent, regurgitation of bile is frequent.

"Bilious attacks" are probably due to duodenal obstruction. The symptoms are often suggestive of ulcer, gallbladder, or appendicular trouble, and in operating for these conditions with negative findings the duodenum should be carefully examined. Medical treatment, consisting of abdominal support, nutritious diet and anti-constipation measures, is beneficial in the majority of cases. Surgical treatment in obstruction of first and second portions consists of freeing of adhesions, gastropexy or duodeno-duodenostomy. In the third portion the procedure of choice is duodeno-jejunostomy. Duodeno-jejunostomy is indicated in (a) vicious circle after gastroenterostomy, (b) accompanying gastroenterostomy when the duodenum is obstructed, (c) in obstruction of the third portion not responding to medical treatment. The total number of duodeno-jejunostomies reported are fifty-eight. There has been no mortality. In the author's series, thirty-six were completely relieved of very troublesome symptoms, four were markedly improved, and only one unimproved. Duodeno-jejunostomy will save from invalidism a group of patients not amenable to other treatment and should be recognized as a definite surgical procedure.—*Annals of Surgery*, May, 1921.

HIGH TRACHEOTOMY AND OTHER ERRORS THE CHIEF CAUSES OF CHRONIC LARYNGEAL STENOSIS.—Jackson finds that deformity follows high tracheotomy frequently enough to make him believe that this form of operation should be entirely discarded. Five-sixths of the stenoses following tracheotomy are due to faulty operation or improper aftercare.

Judging from the experience of his clinic the author finds that high tracheotomy usually means, in practice, division of the cricoid cartilage, though in theory it means only that the operation is to be done above the isthmus of the thyroid gland. Division of the cricoid cartilage means loss of the only complete ring-like support to prop open the lumen of the laryngeal airway. But division of the first ring is also better avoided, because the inflammatory reaction that results from the mixed infection inseparable from a wound accessible to the air leads to stenotic infiltration of the superjacent subglottic tissues, which are not only at the site of a narrower lumen than that of the lower trachea, but the subglottic tissues are of a different character from those of the trachea proper. Prolonged wearing of the cannula will result in a larger, more intractable spur on the posterior wall above the tracheal cannula, in the high than the low region.

His summary is: The most frequent cause of chronic laryngeal stenosis is high tracheotomy. While in a given case no one has any right to say that the operation that saved that patient's life was an unjustifiable one; yet, equally rapid methods being available, high tracheotomy should not be taught. The classic distinction between a high and a low tracheotomy with reference to the isthmus of the thyroid gland is a relic of the days when too much respect was had for the thyroid gland, or at least for its isthmus, and the distinction should be abandoned. The vitally important matter of where the trachea should be incised should not depend upon the negligible isthmus. There should be taught only one tracheotomy and that should be low. The trachea should always be incised lower than the first ring except in those rare cases in which laryngoptosis renders this impossible without entering the anterior mediastinum. The cricoid cartilage should never be cut unless laryngoptosis places all the rings of the trachea below the upper border of the manubrium, which would require entering the mediastinum

if the rule were to be followed. The tracheotomic causes contributing to chronic laryngeal stenosis are: a. High tracheotomy. b. Hasty operation. c. Attempts at general anesthesia. d. Cutting of the cricoid cartilage. e. Hacking the trachea by several incisions instead of one. f. Denuding the tracheal cartilages of perichondrium with resultant necrosis. g. Suturing the wound. h. Prolonged wearing of a cannula that is of improper size, shape, or material, such as rubber or aluminum, or one with fenestra or one without a pilot. i. Neglect of proper aftercare. The keynote of the aftercare should be that it is a plumber's job; the "pipes," natural and instrumental, must at all times be kept clear. If in an emergency a high incision of the trachea has been made, a cannula should not be worn in it. As soon as the patient's breathing has been resumed a low incision should be made and the cannula should be inserted therein.—*Surg., Gyn. and Obs.*, May, 1921.

ACUTE INTESTINAL OBSTRUCTION.—Finney collected 245 consecutive cases of bowel obstruction in the Johns Hopkins and Union Memorial Hospitals during the last ten years. 217 of the patients were operated and 141 recovered. The mortality rate in those operated during the first 12 hours was 5 per cent., of those during the second 12 hours was 11 per cent., while the rate rose to 31 per cent. when operation was performed between twenty-four and forty-eight hours. 100, or 40 per cent., of these patients had had a previous operation which was directly involved in the obstruction, appendicitis, with or without drainage, or pelvic operations being the most frequent cause of this sequella. The mortality in the cases following pelvic lesions was 50.9 per cent. The cardinal symptoms of obstruction were present in the following proportions: sudden, colicky pain, 83 per cent., nausea and vomiting, 80 per cent., more or less constipation 58 per cent., distention 48 per cent.

The author believes that while difficulty may be experienced in making a diagnosis, especially in postoperative cases, a definite diagnosis is not necessary before operative measures are begun. Early diagnosis is the most important factor in the whole category. It is better that the operation should be done early than well. Better a poor operation done on a patient in good condition, than a good operation done on a patient in poor condition. One is too largely influenced perhaps, in delaying operation in the postoperative cases, by the fact (a) that the patient has just gone through a major surgical operation and both he and the surgeon dislike exceedingly to submit again to that trying ordeal; (b) that so many cases, comparatively, have symptoms strongly suggesting intestinal obstruction, especially after certain forms of abdominal operation, and recover completely after rest, gastric lavage, starvation, enemata, and medical treatment, that the temptation is strong to postpone the operation unduly in hope that relief may be afforded through these means. Hence often valuable time is lost in this way, and when the operation is finally decided upon, it is too late.—*Surg. Gyn. and Obs.*, May, 1921.

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ELECTRONIC REACTIONS AND HOMŒOPATHIC ATTENUATIONS

BY

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(Read before the Homœopathic Medical Society of Western Massachusetts at the
Wesson Memorial Hospital, Springfield, Sept. 15, 1920.)

It is not so many years since the scientific world was agog over the writings of Hinton and other mathematical scientists, on the mysteries of the Fourth Dimension, and its natural outgrowth higher space. Now we are hearing a great deal about the electron theory, and still more recently we have been conjuring over the shadowy boundaries of Prof. Einstein's Theory of Relativity. Truly the scientific world is in a state of perennial flux.

In order to justify the premises of this paper, it will be necessary first of all to enter into a few definitions. To properly understand what is meant by an electronic reaction, we must first of all concern ourselves with the proper conditions for the demonstration of such phenomena; and in the second place, be convinced in our own minds that such reactions do exist.

To the mind of the unconvincible materialist such conditions are difficult to say the very least. At the outset, therefore, we must outline briefly the electronic theory. This is possible only when we shall have oriented ourselves regarding the electron.

It was a clever definition given by Dalton of the atom (from the Greek: *átomos* that which could not be cut) —the theory that all matter is composed of atoms, the

weight of each differing in the different elements. The *atom* itself is described as the ultimate unit of an element; that part incapable of further division, or the smallest part capable of entering into the formation of a chemical compound, uniting to form a molecule, which latter is described as the smallest quantity into which a substance can be divided and retain its characteristic properties or can exist in a free state.

It were well, while they laid down in a dogmatic way certain limitations to the probable size of the atom, that the followers of the Daltonian theory did not; that they could not set a final limit—else once and for all would have ended the progress of all human knowledge. It were well, therefore, that the clear definition just given could not be limited to the older atomic theory itself, else we could not speak of an *atom* of electricity, which in its turn can be still further divided into its component constituents, its negative and positive ions.

What then is the electron? In its derivation this word takes the same root as *electricity* (from the Greek: *ἤλεκτρον* amber). It is the term used to represent a separate unit of electricity.

Prof. J. J. Thomson, who is probably one of the world's greatest scientists, has estimated its size as about one seven-hundredth of an atom of hydrogen, which is generally conceded to be the lightest known gas. In other words, an atom or unit of electricity represents but 1/700th of the mass of the hydrogen atom. The electron is the ultimate particle of negative electricity.*

The *ion* carries either a negative or a positive charge, according to the pole from which it is discharged, as anion or kation. It represents an atom or group of atoms carrying an electric charge. The literature on the electron and the electronic theory is large, but not correspondingly illuminating.

*Since the above was written our attention has been called to the fact that Dr. Irving Langmuir of the Research Laboratory of the General Electric Company, has recently described to the National Academy of Sciences, in Washington, what he terms the "Quantel", which he contends is the basic "Structure of everything that is." The quantel it is claimed has two parts, one negative, the other positive, and is present everywhere in space. It is thus the smallest thing in the known universe; smaller than the atom, smaller even than the electron. Quantels comprise, in this scientist's estimation, what has previously been described as the ether of space. Dr. Langmuir's experiments were predicated on the Einstein Theory, hence our mention of the above. (N. A. J. of Homœopathy, May, 1920.)

The definition of Prof. A. R. Milikan of Chicago, is oft quoted, as to the mass of the electron:

Prof. Milikan of Chicago University, to whose persistency and exhaustive research we owe the isolation and measuring of the ion, states that this "smallest thing in the world" is so diminutive that it would take one hundred millions of people something like four hundred millions of years to collect a sufficient number of these electrical units to generate by electrolysis enough hydrogen gas to fill a child's toy balloon eight inches in diameter. ✓

And more recently he has stated that "if two and a half million people living in Chicago were to count as fast as they could without stopping to sleep, or eat, or die for 20,000 years, then if the amount all had counted were to be added up, the total would be the number of electrons passing through an ordinary light filament in one second."¹ ✓

Sir Oliver Lodge, whose data relative to the ether of space is known the world over, suggests that if an ordinary church represent an atom of hydrogen, the electrons constituting it will be represented by 100 grains of sand, "each the size of a printer's period dashing in all directions or rotating with inconceivable velocity and filling the whole interior of the church with their tumultuous action."²

Matter, energy and the ether of space may be said to constitute the electron theory. Matter is reducible in its ultimate analysis into the molecule, the atom and the electron.³ 2

And finally, what do we really know about it? Simply this: that it is the unit of electricity. What is electricity? That we do not know—but we study its effects—so it is with the electron. 1

The time was in the beginning when all the electricity known was only sufficient to excite the spasmodic movement of a muscle-nerve preparation. Yet even Galvani in his crude experiments observed that the cells of a battery arranged in a series were productive of a stronger and more constant current than when the same amount of electricity was combined in a single unit. This is even true at the present time in connection with the simplest electric apparatus. Galvanism was

1. Trans. International Hahnemannian Association, 1918, pg. 83.

2. New Concepts in Diagnosis and Treatment, Albert Abrams, M.D., pg. 3.

3. Ibid, pg. 69.

simply a continuous current of low electromotive force used for the diagnosis and treatment of disease.

ELECTRONS: Corpuscles (small bodies), they are also sometimes called. These corpuscles are charges of electricity. It is evident at once that there was but one thing that could be done with the older theory of atomism, and that was to extend its boundaries to include the dim horizon of the electron. Thus we can now speak of matter as being composed of molecules; these in turn consisting of atoms of specifically charged corpuscular bodies—electrons. In size an atom of electricity is composed of masses of electrically charged units “spherical in shape and each about one two hundred millionth of an inch in diameter.” Throughout the spherical mass are some eight hundred minute particles of negative electricity all alike flying vigorously about, each repelling every other particle yet all contained within their orbits by the mass of positive electricity which constitutes about one *per cent.* of the atom's mass. Let us hear a few of its delineations:

1. “The electron is the smallest entity known to science and is a thousand times smaller in mass than the smallest atom.
2. It is a sphere of positive electrification enclosing a number of negatively electrified corpuscles which counter-balance the positive electricity of the enclosing sphere.
3. The electrons are characterized by uniformity of their vibrations. This is demonstrated by the sharpness of the lines of light making up the spectrum of an element. . . .
4. Light and other radiations are dependent on disturbances in the surrounding ether caused by a change in the motion of the corpuscles. . . .”

“The phenomena of moving electrons are known as radiations and the rhythmical ethereal vibrations occurring within certain limits of frequency constitute light. Everything in nature is in a state of perpetual motion and the latter is continually changing from one velocity to another.”

“The power to change the state of motion of a body is *energy*. . . . Energy is the universal commodity on which all life depends. Energy, like matter, can neither be created nor destroyed. The energy in all matter is enormous and it has been estimated that one gram of hydrogen possesses sufficient energy to raise one million tons through a height exceed-

ing three hundred feet. . . . Electrons are only electricity and nought else is in existence but electrons." ¹

"According to Sir J. J. Thomson, the energy contained in one gramme of matter would represent 100,000,000 kilgrammeters. Max Abraham calculates that one gramme of electrons (particles, set free in the disintegration of matter) represents the energy of a horse-power of 80,000,000 per second."

Radium emits particles of finely attenuated material or semi-material particles, spontaneously charged with electricity, which are known as B electrons, varying in size from the hydrogen atom, to 2,000 times less. These particles are emitted with a velocity more or less akin to that of light (300,000 kilometres per second).

"In other words, all matter is in process of dissolution and decomposition. It is throwing off atomic particles, and is, therefore in a permanent state of disintegration, a process which manifests itself in the outpour of various forms of energy; heat, light, electricity, radioactivity, etc. The forces resulting from the liberation of the energy latent in the atoms are in a state of transition between the material and the immaterial. Some of them are hardly more than semi-material (such as the gas emanating from radium and the electrons); others are no longer material at all. These forces vanish, and we cannot follow them beyond a certain limit. Perhaps they return to ether, to the imponderable world. Perhaps they form a transition stage, destroying the barrier that was supposed to exist between the ponderable world." ²

Thus we find the borders between the visible and the invisible worlds continually growing thinner and thinner.

The development of the electron theory is coeval with the birth of radium. While this mysterious element was not discovered by the Curies until the year 1902, Becquerel had noted as early as 1896, that the rays of uranium compounds possessed the property of acting upon photographic plates similar to the Roentgen rays. In 1900, Doro discovered radium emanations, an invisible gas, luminous in darkness, which has electric properties, and has the quality of permanency. This gas does not react chemically, and changes after a time into helium. It is this emanation that is used therapeutically.

1. New Concepts in Diagnosis and Treatment.

2. From Wickman's "Radium Therapy."—N. A. J. of H., Dec. 1919.

The internal use of radium and its compounds was first suggested in homœopathic practice by Dr. John H. Clarke of London. This preparation was the radium chloride, but it is to Dr. W. H. Dieffenbach of New York, that the extended proving of radium bromide is due. Dr. Dieffenbach makes clear the distinction between the emanations of radium and the X-ray. The latter he states is simply a short transverse vibration of the ether, approximating the gamma ray of radium. This gamma ray, which is more penetrating than the Coolidge tube, is only one of the forces of radium. It gives off the alpha and beta rays, each with different therapeutic action, but one of the chief properties of radium is that of induced radioactivity.

It is a well-known fact that photographic impressions have been made with preparations of radium in the 30x and even as highly protenized as the 60x triturations. To this fact we shall make further reference.

Having given a brief idea of the electron and the electronic theory, what then is an electronic reaction? Plainly it is a change in electronic polarity, *i. e.*, from negative to positive, or *vice versa*. So far as the writer is acquainted no medical scientist has undertaken the development of this theory to the uses of therapeutics to the extent achieved by Dr. Albert Abrams of San Francisco, at whose laboratory it was our pleasure to spend ten days while on the Pacific Coast. From Abrams, probably better than from any other laboratory scientist, it is possible to know as much as is known of this theory as applied to the science of therapeutics.

In some of these definitions and explanations we have, therefore, drawn somewhat extensively from the author's work just quoted, "New Concepts in Diagnosis and Treatment." Abrams states that the energy discharged from the human body in health, and which he measures accurately in terms of electrical resistance, may be: 1, Positive. 2, Negative. 3, Neutral (isoelectronic). 4, Positive and Negative. Without going very much into details, this is measured by means of a delicate instrument called the *Biodynamometer*. For the present descriptive purposes this consists of a small rheostat wound to carry 100 milliamperes with a voltage of 20. The scale is graduated in one-twenty-fifths of an Ohm to one Ohm, and then up to 50 Ohms. Human energy is variable—to paraphrase Ohm's law, "directly as the biodynamic force and

inversely as the resistance. The greater the resistance, the smaller is the quantity of energy which a given biodynamic force will produce. The latter force is measured in Ohms or fractions of an Ohm," (p. 44).

The connecting apparatus consists of a distal and proximal electrode of the insulated copper wire (cords) 80 cm. in length. These electrodes are of special aluminum.

It may be said at the outset that the specific use made of the measuring of bodily energy is first of all to outline the normal areas where this biodynamic force is put forth from the body, and to measure its potentiality. Advantage may then be taken of these abnormalities in the diagnosis of disease.

The method of using the biodynamometer is as follows: "Let us assume that the biodynamic force sought is from a carcinoma. Place the pointed electrode over the site of the neoplasm and the other electrode at the usual area near the stomach. Note that at zero the dullness of the stomach is pronounced, then gradually interpose more and more resistance until the stomach dullness on percussion disappears, when the latter point is attained, the scale on the instrument will indicate the Ohmic resistance of the growth.

"After this manner one may gauge the progress of the growth. As a rule, the Ohmic resistance diminishes with amelioration of the condition." (Pp. 44-45).

The stomach reflex is produced through the vagus which is "the chief *autonomic nerve* innervating the viscera."

This reflex is elicited in response to a stimulus; and when a proper stimulus is applied to the stomach region, percussion of the stomach elicits dullness—this in contradistinction to the generally accepted idea that the stomach area is only to be mapped out by its tympany, thus giving ground for the author's claim that "it is impossible in the norm to differentiate by percussion the tympanitic resonance of the stomach from adjacent coils of intestines." (P. 23).

The stomach reflex is best elicited on a healthy subject with moderately thin abdominal walls, yet possessing at the same time known stomach tonicity, and in whom a tympanitic sound is demonstrable by percussion *over the entire abdomen*. "Spastically contracted intestines, obesity, the presence of feces and intra-abdominal congestion" will modify the abdominal tympany. (P. 32).

For esthetic reasons it is best to screen the subject from the patient. The subject must wear no yellow material, nor have ingested any food possessing this color prior to the examination. The time best suited for tests is about one hour after a repast. The subject must be in the erect posture and *must face the west*, exactly in the *magnetic meridian*. All iron or steel articles are removed from the room and the pockets of the subject.

The subject is first "grounded," *i. e.*, must stand on a flooring of unvarnished wood, and when the flooring is of insulated material, must stand on a sheet of *aluminum*, which is grounded by a wire with a convenient faucet, radiator or gas-pipe. The lower stomach border is first determined by percussion; and when accurately elicited, "the percussion sound is either dull or tympanically dull; the graduation being dependent on the intensity of the energy plus the response of the gastric musculature. After demarcation of the lower stomach border with energy of moderate potentiality, and an energy of greater potentiality is conveyed, there is not only accentuated dullness but likewise a *retraction* of the stomach border, *unless the latter is considered, percussion is not extended far enough up, and an error may be perpetrated by failing to recognize the receded stomach reflex.*" (Pp. 39-40.)

In addition to the determination of the electronic reactions of the various viscera to the abnormal stimulation of diseased or pathological tissues, in certain specific areas which the author has mapped out and charted upon the various parts of the body, particularly the abdomen and chest, careful study has been made of the varying rates of vibration of all the different varieties of neoplasms, malaria, streptococcus, straphylococic and other infectious process, and particularly of systemic diseases such as syphilis, tuberculosis, et cetera, and these data are now used for the purpose of diagnosis and treatment.

It has also been determined that the two sides of the body possess different and opposite polarity; and in the male and female subjects this polarity is usually (normally) not reversed. Thus in the male subject, the right side is + (positive) and the left side — (negative); nor in the female is the reverse the case. There is this exception, however, namely, that the energy polarity is the same in both sexes from both psychomotor regions; "yet an energy sufficient to dull

the stomach can only be drawn off from the left p.m.r. in the male and from the right p.m.r. in the female. From the right p.m.r. in the male and from the left p.m.r. in the female, the energy polarity is non-dulling." (P. 72).

The question naturally arises, what has all this experimental research to do with homœopathy?

During the writer's stay in San Francisco, the opportunity occurred for the testing of various electronic reactions with respect to general diagnosis, and knowing of our interest in the demonstration of homœopathy, Dr. Abrams volunteered to test the reactions of any homœopathic remedy we might choose. *Natrum muriaticum* was selected, chiefly by reason of its very definite and demonstrable effects in malaria—a known parasitical disease. Accordingly *natrum muriaticum* was tested in the 6x and 12x potencies, with results which were recently reported in the *Homœopathic Recorder* for February, 1920.*

Briefly the result of this test showed that the 6x trituration gave a radioactive potentiality of $3/25$ th of an Ohm; whereas the 12x trituration showed a radioactive potentiality of one and $3/25$ th of an Ohm—an increase of nearly 1000 times.

The highest potency previously reported as tested by this method was Abram's test of belladonna 6x dilution, which yielded a radioactivity of 12 and $11/25$ th of an Ohm, an increase of 303 times over the tincture, the reaction of which was $8/25$ th of an Ohm.

It will be noted that, while the radioactivity of *natrum muriaticum* is not as great in Ohmic resistance, the proportion or percentage of increase between the 6x and 12x potencies is relatively greater.

What, it may now be asked, is the advantage of such experiments to the cause of homœopathy? This question may be answered thus: Adequate tests of this sort should prove of advantage to homœopathy chiefly in four directions:

(1) Because experiment with the electronic method of demonstration has a distinct scientific value, chiefly because it furnishes a means for establishing scientifically what Hahnemann established at first theoretically, and later experience has corroborated clinically, namely, the therapeutic efficacy of the infinitesimal dose.

*Homœopathic Attenuations and the Electronic Reactions of Abrams.

(2) From the pharmacological standpoint, it furnishes a definite means for measuring the radioactivity of small doses of medicines, that they may be tested and labelled accordingly.

(3) From the pharmacological standpoint: It would if carefully carried out, furnish a definite means for assaying each drug in dilution or triturate form, and this would become a definite means of testing drug presence and the comparative virtues of the different preparations and different potencies of the same drug.

(4) And finally, from the standpoint of forensic medicine, it would offer a direct challenge to the enforcement of the Pure Food and Drug Law—when ordinary tests of homœopathic remedies fail to reveal the presence of drug substance beyond the definite methods seen fit to be indicated by law.

Aside from all these possible reasons, there comes the sense of pride in our system, which, even though not found to be demonstrable by this or any other known scientific means, would still warrant our respect and trust owing to its clinical results.

No one of scientific mind could fail to welcome tests which would throw any light upon the obscure problems of infinitesimal dosage.

Whatever any of us may hold personally, it is a very evident fact that the physician who, by reason of faith or through venturesomeness of spirit, makes bold to give any potency (with the exception of radium and some of its salts above referred to), above the 24th or 28th decimal does so on his own responsibility. He has but himself to answer to, and up to the present time he has nothing but the so-called "clinical test" to support him. The American Institute of Homœopathy does not sanction such dosage, nor does any other scientific body known to the writer's knowledge. Yet how few of us would wish to be limited merely to what has been in the past demonstrable of drug substance by experience carried out under the so-called Milwaukee test?

It is just here that it is hoped the electronic theory may come to our aid and prove a convincing ally to the faith of the Hahnemannian.

It is a fact that must not be lost sight of that the tests just referred to were all carried out prior to the discovery of radium and the birth of the electron theory. Consequently

they can have only such weight as all tests conducted upon the older *atomic* hypothesis.

Let us review briefly the most conclusive evidence adduced in the defense of the former Milwaukee test. This from a digest of a course of lectures on the Law of Similars: Its Dosage, etc., by that doughty champion, Conrad Wesselhoeft, who quotes the dimensions and weight of molecules as given by Maxwell as to "*the number of molecules in a drop of liquid* (tincture, watery extract, etc.), "If we take," he says,* "the weight of one drop of water to be equal to one minim or 1.9533 grains, $4\frac{1}{2}$ (the average between four and five) grammes would be equal to $69\frac{3}{10}$ grains; or, taking even numbers, we will say that they contain 67 drops or minims. Dividing by this the number of molecules (1024 or one quadrillion), we obtain a quotient of a little less than fifteen thousand trillions, a figure of twenty-three places beginning with 14,925, etc.

"It may be objected that these figures are only approximately correct; indeed, no more than this is claimed by the authorities quoted, but they also show that six or ten ciphers more or less have but a trifling effect upon such large numbers; besides, all their calculations were conducted largely on the side of safety, by making everywhere due allowances for errors. And now when we apply our simple method of division by 100 to the figure obtained above (fifteen thousand trillions, 15,000,000,000,000,000,000), it will be readily found *that with the eleventh division (eleventh centesimal dilution) the end of the sum is reached, and the number of molecules in a drop of liquid is exhausted.*"

"But let us suppose that all the above figures fall far short of the actual number of molecules they express, and that instead of trillions we had quintillions, or sextillions, that is, an additional number of six to twelve ciphers to deal with, in this case three to six repetitions of the process of division by one hundred (dilution) would again bring us to the end of our sum, that is, the fourteenth or seventeenth centesimal dilution would limit us at the utmost."

This then was the supposed dogmatic limit of the homœopathy of forty years ago as reasoned in accordance with the scientific knowledge of the pre-electronic era. The fourteenth or seventeenth centesimal dilutions correspond to the twenty-

*The Dose and Action of Attenuations, pg. 57.

eighth, or at the utmost, the thirty-fourth decimal attenuations. Clearly if this be the limit of drug attenuation, it was the result of the short-sighted vision of the Daltonians, and not the fault of homœopathy.

The figures just given represent the last word as far as physical science could aid the followers of Hahnemann in the establishment of potentiation upon a scientific basis. What then is offered in this modern age? We have already quoted the relationship between the atom and the electron. Applying this proportion we can safely say that if the atom is to the electron as the church to 10 grains of sand, we can, if we figure the problem mathematically, soon find what relative proportions our electronic figures will bear to those given upon the atomic basis of computation. If the photographic tests made with radium were the only proof of the presence of drug substance as high as the 60x, the clinical test would still remain. It is claimed by Abrams that not only are radium and its compounds radioactive, but that radioactivity is a universal property of all substances.

If this be true, then a potency of belladonna 30th (60x), or natrum muriaticum 30th (60x), would be equally as active radiopotentially (*i. e.*, in the same relative proportion), if such potentiality were capable of demonstration.

Color seems to be playing a large part on the present-day trend in therapeutics; the use of colored lights, incandescent lamps, chromatic screens, et cetera, are after all but the utilizing of varying degrees of vibration. In fact, as an extension of the researches of Abrams, Dr. George Starr White of Los Angeles, has developed and perfected a series of chromatic screens of different combinations of colors by which with the combined use of the visceral reflexes of Abrams, he is enabled to diagnose and treat successfully a variety of such diseases as syphilis, tuberculosis, gonorrhea, malaria, etc. In fact, no less than thirty or more of such combinations have been worked out for actual treatment; there are in all fully one hundred and fifty of these screens in the complete list. Another physician in Chicago, Dr. J. W. Enos, has applied his idea in the working out of the reactions to homœopathic, or, as he calls them, electronic remedies, and he has developed this line to such an extent that he is able to dispense with the use of screens altogether, and hopes eventually to be able to demonstrate the correct diagnosis of homœopathic remedies to any

one, without the use of symptomatology at all. Thus we see what the trend of this ultra scientific attitude is at the present time.

Those of us who are still confident of the efficacy of attenuated drugs will perhaps be satisfied if, in our efforts to demonstrate the presence of the physically minute, we can make some very definite and legitimate use of this modern theory in the demonstration of homœopathic medicines.

So much interest is being taken in this subject at the present time, that at the last annual meeting of the American Institute at Cleveland, arrangements were made for the scientific demonstration of homœopathy, in direct accordance with the most up-to-date findings of the electronic theory. And you are doubtless all acquainted with the paper presented by Mr. Kettering upon the electronic theory and of his most generous gift of four hundred thousand dollars to the College of Homœopathic Medicine of the Ohio State University, for experimentation along scientific lines.*

It is well known that substances such as sodium, magnesium and calcium have definite color reactions, and each emits its own very characteristic display when burned. As these substances are reduced to their finer subdivisions, it would be reasonable to assume that these vibrations which, when in crude combustion, produce such characteristic and constant color reactions, are not lost, but are merely raised in the vibratory scale to higher planes of expression—to a point where by repeated subdivision, the color spectrum of sodium chloride (*natrum muriaticum*), for example, entirely disappears. Spectral analysis, it is true, aids us to a great extent in following out this reaction to its finer subdivisions. Because the color reaction is not in evidence, however, is no proof that it has ceased to exist—but has merely changed its recognizable structure and form. Its substance remains. By applying this idea to the twelve tissue salts of Schüssler, which it is claimed are present in the final analysis of all vegetable remedies, it is easy to assume that vibrations which in crude form are slow enough to become perceptible, as in the case of sodium, for example, are still present in quite definite proportions in the higher potencies or octaves of every drug.

* Mr. Kettering also delivered a most convincing address at the Institute Dinner at the last meeting in Washington, and received a splendid ovation.

Not only is this idea applicable to the twelve mineral salts, but may be applied alike to all three kingdoms of nature, which offer merely differing rates of correspondence.

A method of demonstration of these phenomena and the direct relationship of these vibrations could be made to the students in any laboratory—by the use of such of these elements as will burn, *e. g.*, magnesium, sodium, calcium, strontium, etc. Furthermore, the various fresh plant tinctures (aside from the chlorophyll all contain) have each its own distinct variation in color and vibration, and each its characteristic odor. These colors persist many of them until several dilutions or triturations have been made, but no one is unwise enough to believe that the physical qualities manifested as odors or colors are lost because the drug is attenuated to the point that we no longer detect them.

The body itself is constantly immersed in a sea of colors, of varying radiations, and in fact the human body is constantly emitting its own individual *aura*, which to the person who is sufficiently attuned to distinguish them is akin to the nimbus or halo surrounding the classic heads of the saints. In fact, the reactions of the body to the various colors in its environment represents the sum of physiological action and reaction—the physiological norm.

The method of Abrams cited above is merely one way of intensifying by vibratory wave lengths, the various bodily actions and reactions, as they express themselves within the so-called human "atmosphere." This atmosphere, according to Kilner,¹ is capable of demonstration by means of color screens, and its varying rates have been photographed with regard to the varying states of emotions, temperament and specific bodily health.

Hahnemann's method of attenuating medicines, though little understood at the time, or even at the present day, was the first forward step toward the scientific recognition of the physically minute and infinitesimal. Any light which can be thrown upon this subtle and delicate method of raising drugs in the vibratory scale should be welcomed by all seekers after truth. The timid and faint hearted need have no fear that any of his pet theories will be greatly modified by the facts which such experiments may disclose. It would seem that

1. The Human Atmosphere.

now is the appointed time in homœopathy for the demonstration of the infinitesimal, if for no other reason than that the follower of physiotherapy is eagerly grasping this theory in support of his use of the various forms of light and color therapy at the expense of the prescriber of attenuated drugs, who possesses this whole *therapia* in its quintessence in the potentized drugs. What better opportunity for the furtherance of homœopathy than the demonstration of its scientific basis by the electronic method, that we may present our science to the world in language and terminology which the trained minds of today can accept? If we can succeed in proving to the laity that the human body—the human machine—is the most delicate galvanometer, the most sensitive biodynamometer yet known to science, and that the provings of drugs upon the human body represent the most graphic records of the electronic reactions yet known, it will be correspondingly easy to prove that the law of similars represents the only logical basis for the action and interaction of these finer forces, which are demonstrable in the curative action of the carefully chosen drug when administered to the sick.

We must not for a moment labor under the impression that homœopathy need make apology for its existence and for its future propagation. Turn where we will we find confirmation of its truth. In the Od theory of Reichenbach, in accordance with the results of neuralanalysis demonstrated by Jaeger some years ago; in the electronic theory of the present time, we find, everywhere, evidence of its truth. In fact, science is only at the present moment catching up with the progress which begins where homœopathy leaves off.

Let us have more of such experiments and welcome them in the true spirit in which Hahnemann himself gave his discoveries to the world.

POTENTIAL HOMŒOPATHIC HEART REMEDIES.

BY

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(Read before The Homœopathic Medical Society of Pennsylvania, Sept. 21, 1920.)

THERE seems to be a general complaint among the younger graduates of the homœopathic schools of medicine of the lack of knowledge of *materia medica* and more of a

lack of inclination to study the subject. This tendency is sometimes observed in the older physicians; this seems very strange to me for there is nothing more fascinating in medicine and few branches of medicine more lucrative; it is a solemn fact that if we wish our *materia medica* to maintain its high standard each one of us must burn the midnight oil comparing our work of the day with the various textbooks.

In presenting this paper it is with the hope that it will remind each one of you of what I have not said and the remedies you use that I have not mentioned; if you question my remarks about any remedy please say so—at least let us have a discussion on the subject. If you are one who thinks medicine has lost its power to longer cure a case, this is the very place to give expression to that belief and be brought back to the faith of your fathers.

It has been my fortune or misfortune, this past year and more to have a large number of cases of heart troubles; whether the flu epidemic left an unusual number of weakened hearts or why I cannot say but I have had my attention called to the comparison of heart remedies more often than in previous years.

AMYL NITRITE.—Amyl nitrite was introduced into medicine by the old school as a remedy for angina pectoris; it was supposed to relieve the pain by powerfully dilating the arterioles and capillaries and thus lessen the arterial tension which was thought to relieve the pain; Dr. Balfour has shown that this is not always the case, since samples kept in properly sealed bottles, retain the power to relax the tension, but do not relieve pain; so for the relief of pain it is necessary to use a perfectly fresh preparation or else one sealed in pearls; pearls are certainly the safest for the patient subject to angina to carry with them.

the deep facial flushing with pulsation all over the body; the

The most striking objective symptom of amyl nitrite is congestion of the retina, the accelerated, intensified beating of the heart and carotids; in organic heart the sounds have a rumbling; with angina the pulse is rapid, full and hard, quickened in a very variable degree, quality very irregular. The subject symptoms there is great anxiety, with melancholy, a suffocated feeling from palpitation; the tumultuous action of the heart produces such pressure on the membrane tympani that the ears feel as though they would burst.

The contraction of the nonstriated muscles is followed by a relaxation and the veins are full, the body covered by a cold, clammy, adhesive perspiration.

GLONOID, NITRO-GLYCERIN.—Glonoid or nitro-glycerin was discovered in 1847 and in the same year Morris Davis, of Philadelphia, under the direction of Hering, succeeded in producing the substance in sufficient quantities for proving. Glonoid is one of the many monuments to the genius of Hering. He introduced this notable remedy into medicine.

In general action it is closely allied to amyle nitrite, paralyzing the peripheral vaso-motor nerves. Its action is more lasting than amyl nitrite.

All of its action is characterized by violence of action; it acts very quickly and has most sudden and violent irregularities of the circulation. Violent heart action; throbbing carotids; rush of blood to the head; flashes of heat; retinal congestion; cardiac neuralgia with radiating pains. Glonoid lowers the blood pressure by depressing the heart's action and is most useful in one drop doses repeated every three to four hours; given in cases of cerebral hæmorrhage it materially adds to steadying the heart's action and promoting absorption.

In its potency it relieves in angina pectoria with fluttering of the heart and violent beating as if it would burst the chest walls with labored breathing, pain radiating in all directions, into the arms with loss of power in the arms. The heart's sounds are loud, strong and irregular. The pulse is full, rapid, intermittent, or full, hard and slow. The intense arterial congestion causes all the pains to be congestive in character.

CACTUS GRANDIFLORA.—The arterial congestion of this remedy is as severe as aconite but is not accompanied by the other acute symptoms; its action seems to be through the sympathetic nervous system and it relieves sudden flushings of the body like "Hot Flashes" of the menopause; the key note of the drug is constrictive pains which run throughout its pathogenesis; given as an organ remedy it will benefit a large number of cases of weakened heart, accompanied by atheromatous arteries. I think we have all come to depend upon cactus to relieve the severe agonizing pain as though the heart was being squeezed.

BELLADONNA.—Belladonna is a remedy I have had such fine results with, and so seldom see mentioned in the treatment of chronic heart troubles, and which so beautifully demonstrates the action of the law of the similars that I cannot help giving my experience.

The action of belladonna on the heart is complex; it stimulates the accelerator centers and at the same time paralyzes the pneumogastric filaments; the heart's action is rapid, the pulse full and the peripheral vessels dilated. The congestion to the brain causes the wild delirium; the blood pressure is greatly increased, cerebral hemorrhage is threatened through its effect on the pneumogastric; there is a lessened muscle tone of the heart, also a watery diarrhoea due to the engorgement of the abdominal vessels. I have cured cases of long standing diarrhoeas accompanied by a large softened heart muscle, when the patient has been dieted for years, by giving the 3x, two tablets four times a day and allowing the greatest freedom in diet. As the heart toned up and was able to take care of the blood supply the diarrhoea disappeared. I have always regarded loose, watery bowel movements in heart cases as friends in disguise as they prevent the dropsy. I have proven this in so many cases that I hope some of you will give it a try out.

CRATAGEUS OXYACANTHA (Hawthorne tincture from fresh, ripe fruit.)—This drug was introduced into medicine by Dr. Greene, an old school physician of Ireland, and I do not find many homœopathic provings—Dr. John H. Clarke, of London, Eng., says it is the nearest approach to a true heart tonic that we have. It is not a heart poison like digitalis, and its action is not accumulative; it is indicated in weak, rapid pulse, dyspnoea and dropsy dependent upon failure of the heart, more especially the right side, whether complicated by valvular disease or a general anaemia. I have had most gratifying results in advanced chronic conditions with extravasation of blood into the lungs as indicated by bloody sputum; five drops of tincture every four hours has been the usual amount given.

COCCULUS INDICUS.—Cocculus is not classed as a heart remedy by most of the authorities; we have been accustomed to think of its effect on the sensorium. From ancient times it has been used to stupefy fish and make them easy to catch. It is commonly used to adulterate beer as it heightens its intoxi-

cating properties. A very common symptom is a sensation of hollowness or emptiness in the head or other parts. Allied to this is a sense of lightness of the body.

The blood pressure is lowered and the pulse rate is increased; along with the vertigo is nausea, which seems to come from the disturbed central nervous system.

My attention was called to the use of this drug in angina by Dr. Weston D. Bayley, of Philadelphia. The first case I used it in was at his advice, a man 65 of most exemplary habits had been in bed for nearly a year, unable to even walk from the bed to the chair without bringing on an attack of pain and vertigo, which seemed to arise from the stomach, great oppression over the heart with marked dyspnoea and a short cough, vomiting without nausea. The heart was enlarged, apex beat displaced to the right; blood pressure subnormal, pulse 100 and markedly weak, the venous system engorged. *Cocculus* 3x every four hours was given and in about one week the vertigo was markedly lessened, and in less than a month the patient was walking around, and as long as he took his medicine he suffered very little pain and lived in comfort for five years when an attack of pneumonia closed the case.

Since then we have had occasion to use this remedy in two other well marked cases with most gratifying results.

SQUILLS OR SCILLA (Maritima.)—I am prompted to call your attention to this drug because so many physicians are using the compound tablet anasarcine which owes its action on the heart to two active principles contained in squills, namely scillipicoidin and scillitoxin; laboratory findings confirmed by clinical observations demonstrate that scillitoxin strengthens the heart-beat and prolongs the diastole; scillipicoidin, the other active principle, slackens the heart's action, and is a powerful diuretic but non-irritating to the kidneys; these two principles acting together stimulate the cardiac plexus, at the same time inhibiting the cardiac fibers of the pneumogastric nerve. The force of cardiac systole is increased so that the pumping power of the heart is augmented to a degree. The arterioles are dilated instead of being contracted as by the use of digitalis, thus avoiding increased blood pressure; diastole is prolonged allowing the ventricles to more completely fill; systole is increased, thus securing a more thorough closing of the valves; pressure in the coronary arteries is increased,

pulmonary engorgement relieved and the heart regulated and controlled.

The manufacturers claim there is no cumulative action; however, Hahnemann was convinced that scilla in a single dose continued active in the system for about fourteen days, anascarcina also contains oxydendrum aboreum or sour-wood, an unproven remedy in the homœopathic school, it is, however, often used as an active diuretic; also sambucus canadensis or elder-bush, this has been proven by our school and a decided action on the heart, causing sharp pain with palpitation so severe as to be visible through the clothing, and arousing the patient from sleep by a terrible constriction of the heart, and it may be that this drug added to the active principles of squills helps to regulate the heart as much as to act as a further elimination; in other words, just what drug is entitled to the action on the system claimed by its manufacturers? And is there not an opportunity to further analyze the drugs entering into this combination, or are we content to depend on this tablet without better understanding the action of each drug, and is it not possible that by a better understanding of the value of each of the drugs, we might find it unnecessary to use them all to secure the same results?

I am quite well aware that I have omitted some of the most familiar heart remedies, nor have I wished to weary you with the enumeration of them all. You are, no doubt, more familiar with the subject than I am, still, if you are induced to enter into a discussion or give us your favorite remedy, the object of this paper will have been accomplished.

**DISCUSSION ON CANCER PAPERS OF DRs. NORTHROP, BENSON
AND BARKER ***

DR. J. D. ELLIOTT, Philadelphia: All of the methods described have the same purpose, that is, the local removal of the cancer. Each has its indications, depending upon the individual growth under treatment. I think that most cancers can be cured if they are thoroughly removed during the early stages, for at that time nature has a certain amount of resistance to this disease and the growth has not spread through the system. The most important phase of cancer today is not some new method of removal, but a dissemination of the knowledge, both to the profession and the laity, that a cure is

*See May number.

possible if excision is undertaken early, but when metastases have been allowed to develop a case is almost hopeless. The difficulty does not lie in the removal of the original growth, for this can usually be done successfully if it has not become too extensive, but the removal of metastases scattered throughout the body is impossible, no matter what means we use. The usual point of recurrence after removal of such lesions as tumors of the breast is not in the original site but at a distance, as in the lymph nodes, spine or liver. Cancers of the mucous membrane, such as those of the bladder or larynx, are particularly prone to early local recurrence, but in many other forms this is not true.

My belief is that until we get a successful systemic form of medication our only chance of reducing cancer mortality lies in earlier diagnosis and immediate ablation of the growth.

DR. R. V. WHITE, Scranton: This cancer problem seems as far from solution now as it did twenty years ago. In view of some of the remarks of Dr. Elliott, I would like to rise in the defense of many of the general practitioners. Many cases of malignancy have been recognized by them and referred to the surgeon in the earliest stages. Radical treatment has been instituted and yet many recurrences have taken place and the patients have died. Those most actively interested in the treatment of this condition seem to agree—that there is no form of treatment yet evolved which is a positive cure. My frank admission is—after eighteen years' experience in the surgical treatment—that no case of well established malignancy is curable by surgical means. Surgical measures are indicated in the pre-cancerous stage. That there is such a stage seems to be no longer questioned. Certain epithelial hyperplasias show distinctive inclinations toward malignancy—gastric ulcer has been proven the cause of gastric carcinoma in a large percentage of cases, and I believe that one step in the successful treatment can be accomplished by a propaganda of education, educating the laity in this fact just mentioned, namely, that of precursors of malignancy, and having their co-operation in the surgical treatment at this time.

It is my opinion that we cannot blame the general public for grabbing at all forms of treatment for malignancy. There seems to be no question but that certain forms of malignancy have been about as successfully treated by quacks as by our profession. With reference to the electro-therapeutic treatment, I would like to make this point, namely, the treatment should be carried out along scientific lines by those skilled in the application of it. In these days of the high cost of living, the temptation to do things ourselves is very great, and it

seems as though the possibilities of success in this method of treatment are too great to warrant any temporizing. Just recently I operated a case of teratoma of the testicle. We followed the vessels in the inguinal canal and went well up under the kidney searching for lymphatic involvement, removing every bit of suspicious looking tissue. Within six weeks we had unmistakable signs of recurrence and referred the patient to a roentgenologist. Improvement was immediate and progressive. At the present time there is no evidence of any malignancy and the patient is in normal health. Six months have elapsed since his last treatment and while I realize that the time is too short to claim any permanent result, still we are watching the case with great interest.

DR. JOHN C. CALHOUN, Pittsburgh: What Dr. Elliott says appeals to me. What Dr. White says, with due regard to the campaign of education, I do not quite agree with. I think that we want to begin with ourselves, before commencing with the laity. There are certain types of malignancy that have a pre-malignant stage; and if recognized then, and then only, in my experience, we can promise relief. I do not know that we can promise a cure. Sometimes we feel pretty good about the results that we have gotten. Having carried the patients over a year or two, we think we have a cure, but someone tells us that the patients have gone to someone else and passed into the Great Beyond. The education must begin with the general practitioner. It is the early recognized case that reflects credit on the physician.

I have had a little radium experience. I could not record a cure. In a series of ten or twelve inoperable cases of carcinoma, I gave from ten to fourteen months of prolonged life. Whether that life was worth it, I do not know. I am not sure whether we really do the patients a kindness by prolonging their lives.

**"MUST WOMEN SUFFER DURING LABOR, IF SO, WHAT IS THE
IRREDUCIBLE MINIMUM? A PLEA."**

BY

M. M. FLEAGLE, M.D., HANOVER, PA.

(Read before The Homœopathic Medical Society of Pennsylvania, Sept. 21, 1920.)

As a result of educational and other influences, the feeling among pregnant women everywhere is, that something can be done, and ought to be done, to mitigate their sufferings during labor. So firmly has this idea taken root that probably

the first, and many times the only question asked of the physician by the prospective patient is, "Doctor, do you give anything for the pains during labor, so that I will not suffer so much?" and many are the times when the physician's answer to that single question will decide whether he will gain or lose a patient. I have known several instances when physicians have built up an extensive obstetric practice, by a little judicious advertising among prospective mothers, of the fact that "They do not let their patients suffer." Most naturally no woman wants to endure more pains during labor than necessary, so that person will indeed be a benefactor to his race who discovers or perfects a method that will bring the desired result in a safe manner.

Many methods have been advocated, and some, notably "Twilight Sleep" have gained extensive advertising, but (as seems the case with many methods, and new discoveries), some fundamental weakness, some deterrent agent, soon develops, which precludes its general use by the profession at large; perhaps, I may say, on account of some intricate or imperfect technique. The goal of our ambition, therefore, should be the development and perfection of some method which would at once commend itself to the majority of physicians for its simplicity, and, above all, for its safety to the mother. Unfortunately, many of these Utopian ideas are more easily conceived than executed, and I do not claim to be an exception to the rule.

As a result of an extensive obstetrical practice during a number of years, I have evolved a personal "line of action," which has brought comfort and joy to many women, at a time when dark despair sat heavily upon the whole household, and the patient's sufferings were well nigh unbearable. It is with no idea of exciting an antagonistic stream of discussion that I present this paper, but only in the hope that my experience may become the experience of many, and that many of the so-called necessary sufferings of women during labor may be entirely abolished, or mitigated to a degree that will earn the attending physician the continued gratitude and respect of the community in which he resides.

From a strictly physiological aspect, labor is, and ought to be a normal function, subject only to the natural variation due to the personal equation, as of temperment, environment, etc. It is, no doubt, true that the great majority of babies

can be born without any special interference whatever, but I also believe that the majority of these women suffer an unnecessary amount of pain. That every woman in labor must have a certain amount of pain, or pains, will probably not be questioned for a moment, since contractions of the womb are necessary in order to produce certain physiological conditions upon which the birth of the child must ultimately depend. In the beginning of labor these contractions are usually painless, but as they grow stronger, they become painful, and give rise to what are commonly known as "Labor Pains." Of course, these vary greatly in different persons as to frequency, duration and severity. If the woman has been carefully watched during her pregnancy, and properly prepared, so to speak, for her labor, there is not much the attending physician can do during the "First Stage" of labor, except to encourage her with the assurance that everything is normal, after first assuring himself that such is actually the case.

When the first stage of labor is nearly ended, that is, when the womb is nearly dilated, or dilatable, the following plan may be carried out, according to the several types of patients which I shall later describe, and according to the ability and discretion of the attending physician. The first type which I shall describe is the woman of five feet three or four inches in height, and weighing one hundred and fifty to one hundred and seventy-five pounds. A primipara of this type will cause any physician of experience some uneasy moments, for he will know that, as a rule, the musculature in this type of patient is quite rigid, slow to yield under Nature's forces alone, and that usually the babies are rather large—from nine to twelve pounds in weight—hence, in a long drawn out labor, aside from the weakening effect on the mother, we are very apt to have a dead baby.

Of the second type are those cases in whom the pains start normally enough, but soon exhaust the strength of the mother, dilatation is slow, and pain after pain seems to produce no appreciable advance, while the vital forces of the mother soon reach a low ebb.

The third class of cases are those in whom the membranes rupture early—sometimes the flow of water is the very first symptom of approaching labor, for the pains have not yet started—and we have a dry birth to contend with. To be sure there may be many other conditions in which the treat-

ment to be presently outlined, will apply, but those given are of such a widely different type that I have cited them in order to show how a comparatively simple method may be applied to quite varied types of cases, with uniform success. The treatment of these cases, as advocated by me, is at once so well known and yet so little used, comparatively speaking, that I hesitate to present it to you at all, for I do not claim any originality for it, but only a simple, safe technique, perfected by a wide experience.

Now, in the foregoing types of cases, personally, I can see no just reason why a woman, especially a primipara, should be permitted to suffer from six to twelve or even twenty-four hours, when one ounce of chloroform, a set of reliable obstetric forceps, sterilized, and a reasonable amount of skill on the part of the physician, will relieve her inside of thirty minutes in the great majority of cases. The technique is easily carried out, for the requirements are, an ordinary drinking glass and a clean handkerchief, for the administration of the chloroform, several gallons of boiled water, and obstetrical forceps, sterilized. Place the forceps in a pitcher of boiled water to which a teaspoonful of creolin has been added. When all these preparations are made, place the patient transversely across the bed and anaesthetize. About an ounce of chloroform, or even less, is sufficient for the great majority of cases, and in the class of cases mentioned, is far preferable to any other anaesthetic, since there is seldom any stage of excitement or nausea and vomiting and, by the time the baby is separated from the mother, and gives its first little cry, the mother is usually quite awake. Of course, in the administration of chloroform, the patient must be given plenty of air during the anaesthesia, and when this little precaution has been carefully observed, I have never seen any untoward effects from its use. It causes a remarkable relaxation of the tissues in a very short time, so much so, that I must add this word of caution to the operator, viz.: Never drag a child's head down through the soft and relaxed tissues of the mother, but proceed *most gently*, exercising steady traction upon the forceps, but relaxing them at frequent intervals, in order to give the tissues a chance to dilate gradually instead of tearing them as must certainly be the case otherwise. Personally, I always place the tip of the index finger of one hand upon the presenting part of the child, in order to detect the least slipping of the instru-

ment at the earliest possible moment, and thus avoid extensive lacerations. Be calm, take things easy, be sure of your position, and, above all, *do not hurry*, but give the tissues time to relax, and you will have no regrets, for you have saved the patient many unnecessary pains, and consequently her strength, so that she makes a prompt recovery, has a healthy, living baby, and you have earned her gratitude. The principal objection which may be raised to this method of treatment is, that not every physician is capable of applying obstetrical forceps in a proper manner. Just here is where the last part of the title of my paper, "A Plea," applies. It is this, that every student of medicine, and every practitioner of medicine, whose duties will require him to do obstetrical work, should so thoroughly familiarize himself with the necessary skill for the carrying out of the treatment suggested by me in the various cases to which it is undoubtedly applicable, that he will not hesitate to give that prompt relief from suffering which the great advances and modern skill in medicine and surgery have rightly led our patients to expect of us, and that too, with the least possible jeopardy to the life and health of the mother and child. Candidly speaking, I do not think the technique and skill required to carry out successfully the treatment I have advocated, is any more, or even as much as should be demanded of anyone who presumes to assume the responsibilities of taking care of a woman during labor, for there is probably no condition in which a woman entrusts her life to the physician of her choice with more implicit confidence than in the class of cases under consideration; so it behooves us to justify that confidence, by reducing the pain and suffering during labor to the absolute minimum but at the same time do nothing which will injure the patient.

Lest the grain of wheat be lost in a bushel of chaff, again I say, "At the end of the 'first stage' of labor, use chloroform, forceps, skill and good judgment, and above all, be calm, be gentle, and don't hurry, and the results will far exceed your expectations; you will be a real benefactor to the community, and be truly entitled to the gratitude of your patients."

CARBO VEGETABILIS: A LIFE SAVER.

BY

ROBERT L. PIPER, M.D., TYRONE, PA.

(Read before the Homœopathic Medical Society of Pennsylvania, Sept. 21, 1920.)

CARBO LIGNI, vegetable or wood charcoal, when well prepared contains but a very small percentage of mineral matter and may be regarded as practically all carbon. Wood charcoal possesses in a high degree the property of absorbing gases and of condensing them within its porous mass. Hence it contains a large amount of oxygen condensed from the air in which it was cooled from its heated state and to this is due its valuable disinfecting and decolorizing powers. It has been used as an application to privy vaults and cesspools, also applied to wounds and sores yielding offensive discharges. Used by our old school friends in doses of from two grains to a tablespoonful in dyspepsia with acidity and flatulence. It was proved by Hahnemann. For homœopathic use a firm piece of beech or birch charcoal divested of the bark is selected, divided into lumps the size of a fist, again made hot, and then speedily extinguished in an earthen vessel provided with a well fitting cover. Having been allowed to cool, the pieces are pulverized very finely and the powder kept in well-stoppered bottles in a dry place. Prepared by trituration as directed under Class 7, American Homœopathic Pharmacopeia.

Cowperthwaite tells us that it acts upon the blood and nervous system, devitalizing the former and exhausting the latter; but its most important action is upon the mucous membrane, especially of the digestive tract, where it has the power of increasing the secretions, rendering them impure, and causing an excessive accumulation of gas in the stomach and bowels. Boericke recommends it in a lowered vital power from loss of fluids; after drugging; after other diseases; in old people with venous congestions; states of collapse in cholera, typhoid, and other debilitating diseases. Patient almost lifeless, but the head is hot; coldness, breath cool, pulse imperceptible, oppressed and quickened respiration, must have air, must be fanned hard, must have the windows open. Hemorrhage from any mucous membrane. Very debilitated. Under special symptoms in regard to location the following

might be mentioned: Indifference to everything he hears and sees, ideas flow slowly, anxiety and oppression; vertigo, head sensitive to pressure, especially of hat, feeling of constriction in head, hair falls out, worse on back of head. Frequent epistaxis with pale face, nose pointed, Hippocratic face; cold sweat. Easily bleeding gums; gums retracted and bleed easily; sensitive when chewing; teeth decay rapidly; increase of saliva; eructations, burning in stomach, aversion to meat and fat foods; to milk which causes flatulence; bad effects from abuse of salt or salt meats; contractive pain extending to chest with distention of abdomen; digestion slow, food putrefies; fetid flatus; flatulent colic. Discharge of blood from rectum, offensive, cadaverous smelling, involuntary stools, cholera, stage of collapse; hemorrhoids, blue, suppurating and offensive, with burning. Menses too early and profuse, leucorrhoea, varices of vulva. Under respiratory symptoms we have hoarseness, worse evenings; aphonia in mornings, worse in damp cool weather, in open air, after eating and talking, must be fanned, breathing short with cold hands and feet, burning in chest, emphysema, cough spasmodic, hollow, with oppression of chest.

Pulse threadlike, weak and faint, palpitation of the heart. Cyanosis, torpor, blood stagnates in capillaries; limbs cold; cramps in soles of feet.

I could quote to you many other proven symptoms which call for *carbo veg.*, but you have them at your command and I simply want to give you my impression, that probably with the exception of the purely gastro-intestinal indications which call for this remedy, the keynote running through all the great variety of human ills wherein it is beneficial is prostration and exhaustion of vital forces. My attention was brought to its magical power very forcibly during the past year in two cases which I desire to describe to you.

CASE I.—Austrian girl, age 10 months, called to see her on evening of August 19, 1919. Found her in stage of collapse, glassy stare, arms and legs icy cold, face Hippocratic, vomiting all food, frequent offensive watery discharges, a typical picture of cholera infantum, which, thank God and improved methods of sanitary science, we see very little of in recent years. I felt that the undertaker had the race practically won, but I prescribed a mustard plaster on stomach, a weak saline enema and barley water, and not brandy, whiskey,

or strychnia—but *carbo veg.* 200. I instructed the family to call me the next morning if they needed me, but I did not figure on that call. The next morning I was called up and told that the baby was a little better and I should call. Upon arriving I was almost stunned to have that little Austrian waif actually smile at me. Michelangelo couldn't have painted a more perfect picture of the Resurrection than I saw that morning, and I paid homage to Samuel Hahnemann as one of the greatest heroes of the world.

CASE II.—American, age 38, and outside of my own family one of the truest friends I have in the world. Every November we cast aside our trials and tribulations, don our dirty old hunting clothes and chase the elusive wild turkey. You notice I said "chase." February 15, 1920, he came into my office and said, "Doc, I am sick." His temperature was 103, chills, pains especially in back of head, dry cough. I prescribed gelsemium and ordered him to bed. That occipital pain was the most persistent critter I ever saw. Almost drove him crazy for 72 hours. If he hadn't been so good a friend I might have tried some acetanilid-aspirin-phenacetin knock-em-out on him. He rapidly developed a broncho-pneumonia, but seemed to be progressing favorably until about the 8th day of his illness when I was called about 6 A. M. by the nurse, who said he was vomiting blood and I should come at once. Upon arriving I found my chum in a state of collapse, semi-conscious, with as perfect a case of the so-called "black vomit" as I never want to see again. Temperature 95 $\frac{3}{4}$, pulse almost imperceptible, cold arms and legs. I tried to imitate the familiar picture of "The Family Doctor," for a short space of time, when suddenly *carbo veg.* stood before me in capital letters. I said to the nurse, "This is grippe season and I am mighty busy now, but here's where *we* get busy." I shed my coat and stayed there three hours—the nurse and I made full time. Hot water bottles, Murphy treatment, and in my opinion, greatest of all, CARBO VEG. 200. The next day my friend's temperature was 101 and he made a slow but complete recovery.

Do you wonder why the homœopath who has the energy to get right down and dig for the true symptomatic remedy is so enthusiastic? I don't.

DISCUSSION

DR. O. S. HAINES, Philadelphia: I think Dr. Piper's paper is apropos of our previous discussion; and I am glad that he has shown us by his excellent study of this remedy, that at least some of the profession are still interested in the old reliable remedies of our armamentarium.

The *carbo vegetabilis* of which Dr. Piper speaks is quite a different thing from the crude charcoal which acts chemically as an absorbent, a deodorant and an oxidizing agent upon the decomposing contents of a human stomach when given in the five grain tablets of our drug shops.

The influence of the potentized *carbo vegetabilis* is entirely dynamic. Hahnemann was the first to elucidate this fact, and also the fact that the dynamic influence is the only truly curative one. I am afraid that we sometimes forget this. We may be in error when we suppose that we are prescribing a dynamic remedy when we administer *carbo veg.* 2x or 3x trituration. I am afraid that we sometimes forget a great deal about the essentials of successful homœopathic practice.

Dr. Piper's paper deals with dynamic *carbo vegetabilis* and his results were real results. He makes it clear that this remedy is especially suited to low states of vital power. It is, therefore, a remedy that has the power to stimulate defective reaction like Opium, Sulphur, Kali carbonicum. I think we shall often wish to do this, if we are scientific physicians.

We see many patients whose weakened vitality has never recovered from some previous illness and who have been ill ever since. They have never perfectly reacted nor recovered and they are apt to date the beginnings of present ill health at some period of acute sickness in the past. Dynamic *Carbo Veg.* is a remedy that will often bring about better health through quickened vital reaction. Few men know this, or knowing it, utilize it in practice.

A STUDY OF SPINAL FLUIDS IN TWENTY-FIVE CASES OF PSYCHOSIS WITH CEREBRAL ARTERIOSCLEROSIS

BY LYDIA BAKER PIERCE, M.D., WESTBORO, MASS.

(Read before the Homœopathic Medical Society of Pennsylvania, Sept. 23, 1920.)

THE following brief study of spinal fluids deals with a series of twenty-five cases, all of them suffering with symptoms of organic mental disease, and classified as cases of

Psychosis with Cerebral Arteriosclerosis. My attention was directed to such a study by the observation that in the examination of the spinal fluid of some of these cases certain of the constituents which denote inflammatory changes in the central nervous system were found independently of all the others. That is to say, one of the tests made in the spinal fluid examination was positive when all of the others were negative, or a combination of two or more might appear. The study was undertaken with a view to throwing some light upon the part played by syphilis in this condition.

In this series the tests applied were (1) the Wassermann test, (2) the test for albumin, (3) the Noguchi and Nonne Apelt tests for globulin, (4) the cell count. In addition to this a Wassermann test of the blood serum was made in each case except one. This patient was in a moribund condition when brought to the hospital and passed away before the specimen of blood was obtained. The spinal fluid was obtained immediately after death. To review briefly the results of these tests and beginning with the first, it is well known that the so-called Wassermann bodies, or the substance which produces fixation of complement is present in the spinal fluid in cases where there is syphilitic invasion of the central nervous system. Albumin is normally present in the spinal fluid in small amounts. When it is increased it denotes an abnormal condition. Globulin is not found in normal spinal fluid. Its presence usually indicates an inflammatory process, or it may mean that the patient has suffered from a recent cerebral hemorrhage, or is the victim of blood vascular changes in the brain or cord.

In a paper recently published by Solomon he brings out the fact that an increase of albumin may be present alone or in combination with other abnormal findings as is seen in one of the cases I shall report, but the presence of globulin is always associated with an increase in the amount of albumin. Of the cells found in the spinal fluid these are normally present in small numbers. Kaplan says the highest count which may be considered normal is 8 per cubic millimeter, and the average number is three or four. Their increase is called a pleocytosis, and is evidence of an inflammatory process. This may vary in degree from a slight pleocytosis, amounting to 14 or 16 cells per cu. mm., to 200 or more, as seen in cases of cerebral syphilis. The cells commonly found are lymphocytes

but other forms may be seen. Accompanying this paper I have prepared a table showing the results of the spinal fluid examination in these twenty-five cases, and it may be summarized as follows:

The series is divided into six groups, the division being made by the results of the tests. Group 1. Those in whom the spinal fluid findings were negative, that is cell count normal, albumin normal, globulin negative and Wassermann negative. Of these there are 13 or a little more than one-half of the entire series. These cases are quite uncomplicated cases of psychoses with cerebral arteriosclerosis. Their ages varied from 39 to 81 at the time of their admission to the hospital. They presented the classical symptoms of the disease, were disoriented, showed memory impairment, emotional instability, incoherence of thought and speech, and general mental deterioration. Many of them had high systolic blood pressure, and all presented sclerosis of the radial and temporal arteries. In each case abnormal neurologic findings gave indication of an organic disease of the brain. Six of the number had had at least one attack of apoplexy previous to admission. Of the entire number in this group of thirteen, only two had positive Wassermann tests of the blood serum. It is impossible to say to what extent the syphilitic infection was a factor in their trouble. There is certainly a wide-spread opinion that syphilis can lead to arteriosclerotic vascular changes. I will cite one case history from this group.

Case No. 2917. Male. Age 57. Admitted to hospital November 8, 1919. Family history negative, except for the fact that one brother died insane, the nature of his mental illness being unknown. Personal History: The patient went to school until the age of twelve, when he began to work in the mines, and later worked on the railroad. He used alcohol to excess and was frequently intoxicated, but it was said he discontinued its use fifteen years before his admission. He had gonorrhoea when a young man. He was married twelve years before admission, but had no children. He had been insane for two months when he was first seen, had attempted to set fire to his home, and had threatened to kill his wife; even flourishing a knife or his cane. He had suffered a cerebral hemorrhage March 22, 1919. He was a fairly well nourished man who showed a right sided hemiplegia. He was disoriented for time, gave the year as 1616. His memory was

impaired. He had no hallucinations, but was the victim of numerous delusions, among them the belief that his wife was untrue to him, and he showed marked emotional instability, was easily excited and extremely irritable. The physical examination showed the right sided hemiplegia, pupils dilated, with sluggish reaction to light and accommodation, deviation of the tongue with tremor, the right knee jerk exaggerated, and Romberg positive. The Wassermann reaction of the blood was negative. Spinal fluid examination: Cell count 1, albumin normal, globulin tests negative, Wassermann test negative. This patient is still living and shows great mental deterioration.

Another of the cases belonging to this group presented an interesting feature. She was a woman, and her mental symptoms were those of psychosis with cerebral arteriosclerosis. The organic lesions affected the cerebellum, producing great disturbances of locomotion. The Wassermann test of her blood serum was negative. The patient died and autopsy revealed the exact location of the lesions.

Group 2. The second comprises cases in whom all the spinal fluid findings were negative, with the exception of the cell count which was increased. One of our series belongs to this group.

Case No. 2760. Man. Age 77, with history of apoplexy, following which he had at irregular intervals epileptiform convulsions which left him dazed and confused. He gave a history of excessive indulgence in alcohol and frequently was intoxicated. Upon admission he was confused, somewhat depressed, showed marked impairment of memory, and heard imaginary voices, one of these being the voice of God, which told him to be good and not swear. Physical examination showed the right pupil larger than the left with limited accommodation to light. The tongue deviated to the right, knee jerks were diminished and Romberg positive, speech indistinct and gait unsteady. His blood vessels were sclerotic. Wassermann test of the blood serum was negative and the spinal fluid showed the following reaction: Cell count 10, albumin and globulin tests negative, and Wassermann negative. This patient is still living and is in a state of great mental and physical enfeeblement. In this case undoubtedly the slight pleocytosis was caused by a localized inflammatory process, the result of cerebral softening, possibly the same that produced the irritation resulting in epileptiform seizures.

Group 3. The third group includes those cases in whom there was an increase in the normal albumin together with a pleocytosis. In this group there was one case.

Case No. 1684. Man. Age 57, with a negative family and personal history. He showed uncomplicated symptoms of psychosis with cerebral arteriosclerosis, with an onset following an attack of stomach trouble accompanied by nausea and vomiting during which he was confined to bed for one week. It was noticed that his mind became confused, his tongue seemed thick and he did peculiar things, such as crawling about on the floor to pick up imaginary objects. He was restless, weak and his gait was unsteady. He made irrelevant replies to questions and at one time became violent and broke window panes. Physical examination revealed sclerosis of the superficial blood vessels and neurologic findings. The Wassermann reaction of the blood serum was negative. The result of the spinal fluid examination was as follows: Cell count 14; albumin increased; globulin tests negative; Wassermann test negative. This case was removed from the hospital and could not be followed as the relatives failed to report further on his condition. Here again we have evidence in the increased albumin and cell count of a low grade inflammatory process.

The second case belonging to this group was that of a woman thirty years old who had Amyotrophic Lateral sclerosis. The Wassermann test of the blood serum showed a positive reaction. The spinal fluid showed the following: Cell count 10; albumin normal; globulin tests negative; Wassermann test negative. She died after a little more than a year's residence in the institution. Her mental diagnosis was that of psychosis with cerebral arteriosclerosis. It is quite likely that in this case there is a relationship between the syphilitic infection and the lesions of the central nervous system, but because of the negative Wassermann of the spinal fluid, it is impossible to definitely trace this.

Group 4. These cases showed all the tests normal with the exception of an increase of albumin and the presence of globulin. Five of our series are in this group.

Case No. 2821. Woman. Age 52, with mental symptoms covering a period of two years. Her family history was negative and the personal history was negative except for epileptiform convulsions which began late in life and occurred at irregular intervals. These were undoubtedly arterio-

sclerotic in origin. The patient was confused, did not know where she was, was restless and resistive, refused to stay in bed, destroyed her clothing, at times wept and at others was restless and agitated. Her memory was impaired. She said that she was thirty-six years old and that her son was only two, whereas he was twenty-one. Physical examination revealed a blood pressure of 180, and there was neurologic evidence of an organic lesion of the central nervous system. There was paralysis of the right side of the face, which later disappeared, the tongue was protruded to the right of the median line, and there were tremors of the hands, tongue and lips. The Wassermann reaction of her blood serum was negative. Spinal fluid: Cell count 3; albumin increased; globulin Noguchi .3; Nonne Apelt positive phase 1; Wassermann test negative. She was admitted in August, 1919, and died the following December. Here again was demonstrable evidence of vascular change or an inflammatory process, or disintegration.

The other four cases in this group showed no unusual clinical features. One of them had epileptiform convulsions the first making its appearance when he was fifty-three years old and three years before his admission. All but two showed a negative reaction to the Wassermann test of the blood serum, one was doubtful and one was not done. All showed the presence of globulin in the spinal fluid and increased albumin.

Group 5. This group comprises one case in whom there was globulin present, with increased albumin and an increased cell count.

Case No. 1160. An elderly woman whose exact age was unknown. Very little was known about her family or personal history. She was said to have been insane for some time and to have had a stroke of apoplexy several days before admission. When first seen she was much demented, and was unable to talk coherently or answer questions. There was paralysis of the right leg. The Wassermann reaction of the blood serum was strongly positive, and the spinal fluid showed a cell count of 15, albumin increased, globulin present, Wassermann test negative. She died after a short hospital residence. In this case again there may have been relationship between syphilis infection and the condition of the cerebral blood vessels.

Group 6. The last group of cases comprises those in

whom the Wassermann test of the spinal fluid showed a positive reaction and there are three. These are evidently cases of cerebral syphilis of the endarteritic type, with atypical clinical symptoms. They are included in this series because of their interest from the standpoint of differentiation and diagnosis.

Case No. 1417. Woman. Age 56. She was a mental defective, never learned well at school, and had convulsive seizures beginning in childhood and lasting until she was twenty years of age. She was married but had no children. A short time before admission she became noisy, talked incoherently, was restless and difficult to manage. When a mental examination was made she seemed to have forgotten her married name but remembered her maiden name. Her speech was indistinct and much of the time she did not appear to understand questions put to her. Her arteries were sclerotic, her pupils showed no reaction to light, the left knee jerk was exaggerated, and Romberg sign was positive. The diagnosis in this case was psychosis with cerebral arteriosclerosis, and this was revised later in view of the laboratory findings to cerebral syphilis. The Wassermann reaction of the blood serum was positive. The spinal fluid showed a cell count of 7, albumin increased, globulin present, Wassermann positive X. She had a remission of symptoms after three years' residence in the hospital and was allowed to go home. There is a strong probability in view of the mental defect with a history of convulsions in early life, that this was a case of congenital syphilis producing blood vascular changes.

Case No. 1292. Man. Aged 40. He gave a history of gonorrhoea at the age of eighteen and syphilis two years later. His mental disorder appeared three years before his admission in 1914. He became violent in his manner, made threats against his family, talked constantly and swore. Physical examination showed sclerosis of the vessels and neurologic signs giving evidence of central nervous lesions. The mental diagnosis made at this time was psychosis with cerebral arteriosclerosis, and was later revised because of the laboratory report. The Wassermann reaction of the blood serum was positive XXXX. The spinal fluid showed a cell count of 28, albumin increased, globulin Noguchi .4, Nonne Apelt positive, Wassermann test positive XXXX. He died after three years' residence in the hospital. This case is interesting be-

cause during the course of his illness he exhibited symptoms which were not typical of general paralysis or cerebral syphilis. He had a number of paranoid ideas, and said that his brother-in-law in Easton was annoying him by blowing powder in his face, as a result of which he kept his head under the bed clothes most of the time. Lowrey recently reported a series of cases of neurosyphilis presenting atypical clinical features, and called attention to the fact that Southard and Plaut had previously described a group with paranoid delusions. This case would seem to belong to this group.

The last case is similar, and was diagnosed psychosis with cerebral arteriosclerosis until the laboratory examination revealed syphilitic invasion of the central nervous system. The clinical symptoms were certainly atypical. He had fantastical delusions, for example, said that his beard would

CASE	BLOOD WASSERMANN	CELL COUNT	ALBU- MIN	GLOBULIN NOGUCHI	NONNE- APFELT	SPINAL WASSERMANN
Group 1.						
No. 2894....	Negative	4	—	Negative	Negative	Negative
No. 3224....	Negative	5	—	Negative	Negative	Negative
No. 2917....	Negative	1	—	Negative	Negative	Negative
No. 479....	Negative	1	—	Negative	Negative	Negative
No. 2602....	Negative	2	—	Negative	Negative	Negative
No. 3166....	Negative	2	—	Negative	Negative	Negative
No. 1843....	Negative	2	—	Negative	Negative	Negative
No. 840....	Negative	4	—	Negative	Negative	Negative
No. 607....	Negative	3	—	Negative	Negative	Negative
No. 3149....	Negative	2	—	Negative	Negative	Negative
No. 1558....	Negative	7	—	Negative	Negative	Negative
No. 1673....	Pos. XX.	1	—	Negative	Negative	Negative
No. 1227....	Pos. X.	3	—	Negative	Negative	Negative
Group 2.						
No. 2760....	Negative	10	—	Negative	Negative	Negative
Group 3.						
No. 1684....	Negative	14	+	Negative	Negative	Negative
No. 1539....	Positive	10	+	Negative	Negative	Negative
Group 4.						
No. 1920....	Doubtful	2	+	.4	Positive	Negative
No. 2883....	Negative	7	+	.4	Positive	Negative
No. 1745....	Not done	4	+	.3	Positive	Negative
No. 2821....	Negative	3	+	.3	Positive	Negative
No. 1865....	Negative	8	+	.4	Positive	Negative
Group 5.						
No. 1160....	Strongly Positive	15	+	.4	Negative
Group 6.						
No. 1471....	Pos. X	7	+	.5	Positive	Pos. X
No. 1292....	Pos. XXXX	28	+	.4	Positive	Pos. XXXX
No. 2814....	Pos. XX	16	+	.3	Positive	Pos. XXXX

change color but could not explain how this would be done. Later he showed a progressive mental deterioration, and now sits about the ward without talking, but is frequently seen laughing to himself.

It is not possible to draw any definite conclusions from so brief a study, which can do no more than point the way to further investigation. The outstanding fact is that laboratory examination of the spinal fluid should be made in cases of psychosis with cerebral arteriosclerosis with a view to establishing the relationship of syphilis to the disease. It is, of course, true that in many of these cases there is no syphilitic infection. The arteriosclerosis is due to other causes. Thirteen of our series illustrate this fact; those in Group 1. A positive Wassermann reaction of the spinal fluid is pathognomonic of neurosyphilis, and the cases in Group 6 illustrate the value of a spinal fluid examination in all instances where there is a question of diagnosis. Nine of our series showed abnormal findings associated with a negative Wassermann in the spinal fluid. Of these two had a positive reaction of the blood serum and one was doubtful, and one was not done. Lowrey has made the statement that "while protein increase in the spinal fluid occurs in a wide variety of conditions in which there is some disintegration of the nervous tissue, the majority of such cases in this age are syphilitic, neoplastic, or vascular in origin." It is possible that even in the face of a negative Wassermann reaction, the presence of globulin, increased albumin and pleocytosis may be of syphilitic origin, and it would appear that in at least some of the cases, which do not develop general paralysis or true cerebral syphilis as we recognize this disease by their clinical signs, a general syphilitic infection may be held responsible for the vessel changes and the mental symptoms. On the other hand in patients with sclerotic vessels, and in many instances cerebral hemorrhage, we know that degenerative changes occur in the brain tissue. There are localized areas of softening and often chronic meningitis, and these, if extensive, would account for the results we have observed.

INTRAVENOUS INJECTION OF FOREIGN PROTEINS

BY

O. F. BARTHMAIER, M.D., PHILADELPHIA, PA.

(Read before the Homœopathic Medical Society of Pennsylvania, Sept., 1920.)

THE use of sera and vaccines in certain specific conditions, has brought about very favorable results in some heretofore unfavorable conditions. Their employment has been followed not only by amelioration, but also cure, peculiarly, too, in some conditions not specifically prescribed for.

It is not my purpose to mitigate the value of those highly specific substances, notably diphtheria and tetanus anti-sera, as well as such vaccines as the typhoid-group, but neither is it to be denied that diphtheria antitoxin has done good in various septic conditions or that the use of horse serum in tuberculosis, arthritis deformans and syphilis has been followed by favorable results.

It is very natural then, that in the analysis of some of the achievements mentioned, the particular agent responsible should be sought. If it is admitted that specific agents employed for specific conditions brought about good, and furthermore that non-specific agents employed for specific conditions and vice versa also operated well, what then is the specific something? Chemically all of these agents have at least one thing in common, namely, a protein, and by experience the particular protein used need not in any sense be specific; in other words, bacterial proteins (vaccines), serum proteins (human or horse) or even milk or peptone might be used interchangeably for the same conditions, and with very much the same results. Of course, it was observed that certain proteins acted better than others, either by reason of dose and bulk control, or more particularly by reason of convenience or safety in their handling.

Typhoid fever acted just as well under ordinary colon organisms as it did against its specific organisms, the typhoid bacillus. Again the colon group act very favorably against pelvic infections, etc.

In hemophilis and psoriasis, serum (horse or human) often does good, and the results following the use of bacterial proteins, or milk (intra muscularly) in arthritis are very often

brilliant. Just how they act is little known, nevertheless there is no denying the fact that antibodies are stimulated, and that a hyperleucocytosis is induced, and it is further probable that there are many blood chemical changes which are responsible for some peculiar serological adjustments, which have a tendency to bring about a more favorable condition than had existed.

For practical purposes I am going to confine this paper to the use of the proteins present in bacterial emulsions (vaccines) and more particularly to the colon bacillus.

PREPARATION.—Colon bacilli, after isolation, preferably from some acute body lesion, are grown on agar slants, washed off and preserved in carbolic salt. They are inactivated, and after sterility is insured and dosage estimated, are put up in sterile bottles containing approximately 100 million organisms per 1 c.c. (Milk, by the way, is autoclaved in test tubes at the time of using and given intramuscularly in 10 c.c. doses).

THE DOSE.—Intravenously about 10-75 M., and repeat every 1 to 3 days as conditions suggest. Injection in the successfully treated cases rarely requires more than 1 to 5 injections.

TECHNIQUE OF INJECTION.—The arm at the bend of the elbow is sterilized, tourniquet applied and a 5 c.c. Luer syringe is filled with salt (85 per cent.) mixed with the proper dose of colon bacilli, and 18-20 gauge needle is fixed, a proper vein selected for injection and entered. To insure that one has entered the vein a little traction is made on the plunger, when, if in the vein, blood will flow into the barrel of the syringe. Once the vein is entered the contents of the syringe is slowly expelled into the blood stream.

REACTION OR SHOCK.—This usually occurs from 5 minutes to 5 hours after injection and is sometimes severe and startling. (Incidentally might be added, after the injection a hypodermic syringe is prepared containing either 1,100 gr. of atropine or .75 c.c. adrenalin sol. 1-1000 to be used at the onset of the chill).

It usually starts with pain in back, headache, abdominal pain and chill, which is severe. A distinct drop in blood pressure, but increases in pulse rate take place. A temporary leucopenia occurs but very shortly to be followed by a distinct leucocytosis. The temperature begins to rise with the chill and runs from 101-106. After the sixth hour the temperature

begins to decline by lysis and usually to normal. Sometimes coincident with the fever is usually a distinct sweat which persists for an hour or more even after the temperature has declined.

After the seventh hour the symptoms usually stop, although pain in the limbs may persist for a while and sometimes a severe herpes may follow. With each succeeding injection, however, these reactions are less marked.

Diseases in which this form of therapy may be employed and usually with good results: Chronic disorders, like some asthmas and in psoriasis, the infectious disease group, typhoid, pneumonia, streptococcic and colon infections, and lastly the rheumatic group, acute toxic arthritis, gonorrheal arthritis and non-specific arthritis.

We have seen in some cases of typhoid fever, after an injection, the temperature drops to normal and convalescence at once established. In no case of arthritis, acute or chronic, have we seen other than some good result from such injections; of course, bony malformations are not absorbed, but pain and discomfort are materially relieved. In some instances fibrous unions have been broken up under anaesthesia and the patient's condition remarkably relieved after injection.

If results were not as expected or relapses occurred we feel it was more the result of conservatism in dosage or failure to repeat and prolong the treatment, than for any other reason. In any event, we feel intravenous protein therapy to be of value in selected cases (more particularly in arthritis) neither do we consider it a cure-all, and even in the diseases in which it is of use it is only used in conjunction with and not to the displacement of other tried procedures.

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DISCUSSION

DR. JOHN G. WURTZ, Pittsburgh: Whenever the polynuclear count is 80 per cent. or over, no matter what the count is, there is usually pus. Ruptured ectopic pregnancy will give a leukocytosis, for the reason that it is a post-hemorrhagic leukocytosis, stirred up by the absorption of the product, and because the bone marrow is actively regenerating and making up for the blood that has been lost. So one must be careful about depending on a leukocytosis to differentiate ruptured ectopic pregnancy from appendicitis.

TREATMENT OF CONGENITAL CLUB FOOT.**BY****JOHN A. BROOKE, M.D., PHILADELPHIA, PA.***(Read before the Homœopathic Medical Society of Pennsylvania, Sept., 1920.)*

To secure a good result, both anatomical and functional, in treatment of club foot, there are two requisites necessary: First, over-correction of the deformity; second, maintenance of this position a sufficient length of time to overcome all tendency to contraction of the soft tissues, and for the tarsal bones to assume their normal shape and relationship. It is, therefore, necessary to begin the treatment as early as possible and to persist in it for a long period of time. Not that the patient must be under treatment over this period, but the case should be under observation and if the tendency is for recurring deformity, treatment should at once be started again.

The subject under discussion in this paper is treatment of congenital club foot, and I will not deal with acquired club foot—the result of poliomyelitis or the various spasticities. There are four definite deformed positions that the foot may assume: 1. equinus; 2. calcaneus; 3. varus; 4. valgus. In club foot we rarely ever find the foot held in any one of these positions but a combination of two—the equino-varus or calcaneo-valgus. The usual deformity is the equino-varus, and practically the only one that demands special treatment.

The centers of ossification of the tarsal bones appear as follows: The os calcis at 6 months, the astragalus at 7, and the cuboid at the 9th month of foetal life. During the first year the cuneiform centers appear, but the scaphoid does not show ossification until the 3rd year or later. The outer border of the foot is, therefore, calcified while the inner is still cartilaginous. The tibialis anticus and posticus are stronger than the peronei; these facts explain the tendency for the foot to relapse into the equino-varus position. There are all degrees of deformity from a slight contraction of the heel cord to the extreme contraction where the toes point inward and backward, and the plantar surface backward and upward.

Some enthusiast of early treatment of club foot has said, if at the time of labor the accoucheur finds a foot or breech presentation to be complicated by a club foot, treatment should

be started before birth of the head. Be that as it may, the younger the child, the more easily the deformity is corrected.

The treatment of the condition depends upon the age of the patient, the degree of the deformity, the resistance of the parts to correction. In the very young child, stretching the foot and holding it in an improved position by plaster-of-Paris dressing, with changes every 2 or 4 weeks, is all that is necessary. In children 6 months to 2 years old, a forcible stretching with tenotomies, fasciotomy, syndesmotomy is usually necessary. After the 3rd or 4th year, bone operations are usually required.

The corrective procedure or non-operative treatment that we usually follow in the very young child is as follows: After placing sheet cotton between the toes, it is wound smoothly over the foot and leg to mid thigh. The foot is now forced up in the corrected position as far as possible without causing much pain, and the knee flexed to about 90 degrees. A light plaster-of-Paris bandage is now applied from toes to mid thigh. The toes must all be visible and of good color, and be inspected next day to see that the circulation is all right. The foot is left in this plaster support for 3 or 4 weeks. Then the plaster is removed, the parts washed and bathed with alcohol and dusted with talcum, and a new plaster applied after the foot is pushed further in a corrected position than it was the first time. A change of plaster is made about every 4 weeks. From 4 to 6 casts are usually necessary to secure an over-correction. After the plaster is removed massage and stretching of the foot is begun. To prevent any relapse to the old position a celluloid foot piece or a night shoe is used. If, as time goes on the foot tends to go back toward the old position, it must be stretched and placed in plaster again. When the child is old enough to walk, proper shoes are given, they are wedged $1/4$ " on the outside heel and sole.

OPERATIVE PROCEDURE.—The older cases, from 8 to 10 months to 3 years of age, whose deformities are resistant, must have an anesthetic and a forcible stretching. The milder cases require a fasciotomy of the plantar fascia and stretching of the inner border of the foot, and lastly division of the achilles. For the more severe cases, the tendon of the tibialis posticus is divided and occasionally it is necessary to loosen the internal lateral ligament from its attachment $1/2$ " above lower end of internal malleolus and allow it to drop down as

the foot is brought into a corrected position. This latter procedure is an efficient one and is to be used in the resistant cases, and is known as the Ober operation. After these operative measures the foot is held in an overcorrected position and plaster-of-Paris applied in the way described above. In a short time the child is urged to walk in the plaster, the outer edge of plaster is made $1/2$ " thicker than inner to maintain the correct position of foot; walking while foot is held in plaster-of-Paris being part of the cure. This is to be worn three or more months when wedged-soled shoes are given or braces worn for a short period.

In most of the severe cases over three years of age, the deformity is so marked and so resistant to manipulation that an operation upon the bony structures is necessary. Many of these patients walk on the outer edge of their foot. With the feet rotated inward, if both are involved, they must raise one foot over the other to make a step forward. To this class also belong the older children and young adults who have not had proper treatment.

The operation of most value for these cases is a cuneiform osteotomy, which is performed by making an incision just anterior to external malleolus and extending across the greatest prominence of the deformity in line with the peroneal tendons. The tendons are retracted and a wedge of bone of sufficient size to allow the foot to drop back in normal position, is removed. The heel cord and plantar fascia will likely also have to be divided. A very generous amount of sheet cotton is applied and plaster-of-Paris put on rather loosely to allow for the swelling. If the swelling is severe and toes are cold and at all discolored, the plaster must immediately be cut; but when this has to be done much is lost in the correction for the position is altered and no great change can be made until swelling subsides. Albee with his ingenious bone work takes the wedge out of the outside of the foot and puts it inside.

In certain cases we cannot bring the foot up to maintain the normal position to quite a right angle even after the Achilles is tenotomized, and if much force is applied we get a sole with a rounded contour, only the anterior portion of the foot is elevated, the astragalus and os calcis do not move. These cases require a section of the posterior ligament which

can be done subcutaneously. In the older cases with an extreme deformity an astragalectomy is of considerable value.

A few years ago the Phelps operation—a section of all resistant structures down to the bone, and allowing gap to fill in with granulation tissue, was the procedure usually followed in severe cases. Today it is rarely ever done; it being a mutilating operation and often leaves a contracting scar which invites a relapse.

In conclusion will state that braces do not correct the deformity and should only be used to help maintain the correction obtained;

That overcorrection of the deformity is absolutely necessary if we wish to hold a normal position of the foot;

That tenotomies without full correction and retentive apparatus are useless;

That the heel cord should not be cut until the varus is corrected;

That when plaster is applied it should always come well to the end of the toes; and,

That club foot, properly treated at an early age, is a perfectly curable deformity; that in older children and young adults much can be done to give a useful foot with a minimum deformity, and if some real effort is not made to relieve these unfortunates they can justly join King Richard III, in his lamentations when he says:

“Deformed, unfinished, sent before my time
Into this breathing world, scarce half made up,
And that so lamely and unfashionable,
That dogs bark at me, as I halt by them.”

PURPURA FACTITIA.—McKeown reports a case of typical hysterical deception, confirmed by the confession of the patient. At first glance purpura was suggested, but a suspicion of self-infliction was caused by the similarity in shape and size of the majority of the patches, the curious shape, the position and distribution, and lastly the absence of any purpuric manifestation elsewhere.—*Journ. Amer. Med. Assoc.*

URTICARIA AFTER SPECIFIC FEVERS.—E. Ward finds that urticaria develops after many febrile affections. He believes it likely that it is due to postfebrile activity of the mechanism of immunity. Joint pains and pyrexia occurring at the same time the author attributes to probable anaphylaxis, due to pathological by-products.—*British Med. Journ.*

EDITORIAL

THE GRADUAL WITHDRAWAL METHODS OF TREATING MORPHINISM

It is alleged that quite considerable of the morphia habit in the past has been the result of negligence on the part of the medical profession when prescribing the drug. We do not know as yet the last word on the subject. Many years ago we had under our care a middle aged man who had sustained a compound comminuted fracture of the knee joint due to gunshot wound. His pain was quite severe and necessitated doses of morphia of gr. $\frac{1}{4}$ each night. After two months he had progressed so far that the morphia was discontinued abruptly at the patient's request. Apparently no inconvenience resulted, and the patient took considerable pride in his will power. One month later there ensued an obstinate insomnia, which no remedy or method of treatment was able to control in the slightest degree. The patient became quite debilitated and finally delirious. Then as a last resort, morphia was prescribed and at once every symptom disappeared, and the patient prospered. After one week's continuance of the morphia in full doses, the drug was gradually withdrawn after the following manner. One-quarter of a grain was dissolved in six ounces of water. One teaspoonful of the solution was removed from the glass, and a corresponding quantity of water substituted. The second night, two teaspoonfuls were withdrawn from the solution, and a like quantity of water substituted; and so each night one teaspoonful of solution additional was taken away from the patient (amounting to $\frac{1}{192}$ of a grain) until at the end of 48 days the drug was eliminated entirely. During all this time the patient was entirely free from symptoms and made an excellent recovery, dying seven years later of heart disease.

This subject was brought to mind by the publication of a little note in *Johns Hopkins Bulletin* for June, by John Rice Miner. In that hospital, the gradual withdrawal method is pursued in a similar manner. The Hopkins details are as follows: A definite quantity of morphia is dissolved in say a four ounce vial. The dose to be given the patient each time is one teaspoonful. As each dose is withdrawn the bottle is filled with water. Thus the solution becomes weaker and weaker

with each withdrawal of morphia solution and addition of water. Incidentally it is to be noted that the patient never ceases to take some morphia. The solution simply becomes more diluted as time goes on.

It is only exceptionally that morphia administered therapeutically requires any effort to secure its discontinuance. To some patients it would seem that the morphia acts as an apparent necessity to the organism, and its abrupt elimination becomes impossible without producing serious distress.

The above methods for gradual discontinuance are submitted to our readers as having been found of use and worthy of confidence when called for. The Hopkins method is especially designed for the morphia habitue.

THE PENNSYLVANIA AND OTHER STATE SOCIETIES

THE next annual session of the Homœopathic Medical Society of the State of Pennsylvania will be held at Bedford Springs, September 13th to 15th, with Dr. G. W. Hartman, President, in the chair, and the Homœopathic Medical Society of Allegheny County acting as host. After due consideration, the committee of arrangements decided that a meeting held at a pleasure resort rather than in a large city would be conducive to a large attendance and more enjoyable and profitable scientific sessions. This was proven by several of our annual sessions, notably those at the Delaware Water Gap, Bedford Springs and Galen Hall near Reading. Perhaps there is likely to be a much larger registration when meetings are held in cities like Pittsburgh and Philadelphia, but the actual attendance at the meetings is lessened because the local profession find it almost impossible to divide themselves up between the sessions and their patients. Inasmuch also as a very large proportion of the members come in their automobiles, the traffic regulations of a city interfere sadly with the parking of cars in front of hotels and convention halls.

A more beautiful place for a meeting cannot be selected. Bedford Springs is situated on the Lincoln Highway, and hence offers special inducements to automobilists from all sections of the State. It is situated at an altitude of 1200 feet above the sea level in the heart of the Alleghenies.

Accommodations for members and their families are as-

sured because the hotel will be run for their special benefit, the regular season closing on September 12th.

The scientific programme of the session will be in charge of the following chairmen: Clinical Medicine, E. R. Snyder, of Lancaster; Surgery, George B. Moreland, of Pittsburgh; Hygiene and Sanitary Science, Wm. A. Pearson, of Philadelphia; Materia Medica, H. Malcolm Read, of York; Ophthalmology, Wm. W. Speakman, of Philadelphia; Pathology, John G. Wurtz, of Pittsburgh; Paedology, H. E. Kistler, of Johnstown.

The local arrangements are under the supervision of Wm. Alvan Stewart and George B. Moreland, both of Pittsburgh.

The revision of the by-laws as published in the May issue of the *HAHNEMANNIAN MONTHLY* will come up for consideration and adoption.

NOW FOR A WORD CONCERNING MEMBERSHIP IN STATE SOCIETIES IN GENERAL.—More than any other societies they furnish protection to the medical profession and enable physicians to practice medicine. The county society looks after local interests. The State Society attends to State interests and State legislation. During the past winter, the Homœopathic Medical Society of Pennsylvania, operating through the Legislative Conference, has done much to further the interests not only of its own members, but also of physicians who are not members and who persistently refuse to become such. We have killed compulsory health insurance virtually for all time, and we have assisted in the obsequies of a number of pernicious bills. What we say of Pennsylvania can be said with equal truth of every State Society of the country. All of them are doing good work, and all are necessary to their constituent practitioners. And yet we hear such expressions: What's the use? I never attend; I never write a paper when I do go; nor do I take part in the discussions; the Society is run by a ring. Just as we have these stereotyped questions, so we give the same answer: "Join your State Society; help support it; do not let other men no more prosperous than yourself furnish the wherewithal to keep you in the practice of medicine. Do not call your Society dead just because you do not go, or belong. If it is dead enliven it by your presence. Never mind the ring; it is purely 18 karat gold or better; of course, we must have a ring. We never heard a man kick about a ring who did any

work for the general good, although he had attained eminence in looking after himself. The latter does not necessarily imply the former by any manner of means, although we have heard men plea for pre-eminence for no better reason than their strictly personal and selfish success. Join the State Societies and enter the ring. There is always need for workers."

NATIONAL HOMŒOPATHIC CLINIC DAY

NATIONAL Homœopathic Clinic Day, as celebrated October 19, 1920, as all our readers know, was a pronounced success. It will be repeated on October 20, 1921, when it is to be hoped that our various institutions will do even better than on the previous occasion. Local conditions vary to a remarkable extent, and times change; hence it is that the same methods will not apply to all hospitals nor to the same hospital every year. Managements must, therefore, exercise ingenuity, foresight and energy in the preparation of their programmes. It is easy enough to present strong scientific attractions in Philadelphia, Pittsburgh, New York, Brooklyn, Boston, Chicago and other centres. The great problem relates to the small hospital in the counties distant from densely settled communities. Several institutions solved the problem last year, and if they can do it, there is no reason why others cannot. The plan that has given the best result in the past has been the holding of the Clinic in conjunction with a session of a county or district medical meeting. Johnstown, Pa., celebrated last year by throwing open its new building for inspection of the public and holding a reception by the Staff and Trustees. Inasmuch as the latter plan is the main feature of National Hospital Day, it is available for every one of our institutions.

The propriety of holding public clinics or demonstrations has been discussed on an ethical basis. We must admit that there is some reason for debate concerning this point. Again much depends upon the methods employed and the individuals employing them. If the clinics are held in such a way as to give the holder thereof the publicity, they cannot be condemned too severely. If they magnify the importance of the hospital and of the homœopathic school, they are in order. There

really is a need for clinics that will educate the public in medical matters, not only in the direction of preservation of health but also for protection from therapeutic fallacies many of which are harmful. There exists at this day many questions concerning which it is currently believed that we have thoroughly grounded knowledge, which when investigated are found to be based upon tradition, and will not bear submission to scientific tests. We trust that the small hospital managements will think over this subject, and give a medical education to the communities which they serve.

INTELLECTUAL STATUS OF THE MEDICAL PROFESSION

IT is but a few weeks since that the newspapers of the country created a sensation by publishing the announcement that Edison considered that our college graduates were sadly deficient in knowledge. To prove their mental inefficiency, there were quoted lists of questions which said college graduates were unable to answer. Some editors raised the question after studying said questions as to who was the most deficient, the man who propounded questions of such a character, or the men who were unable to answer them, for after all one part of knowledge consists in not knowing. Everything has quieted down and scarcely are we rested when along comes the "Bulletin of the National Research Council, Vol. I, Part 8, No. 8, 1921," bearing the title, "Intellectual and Educational Status of the Medical Profession as Represented in the United States Army," by Margaret V. Cobb and Robert M. Yerkes. And now we are learning something about ourselves. No longer need there be the yearning for the privilege to be given us to see ourselves as others see us, for so it is chronicled in said Bulletin that physicians or rather medical officers in the United States Army during the late war exhibited an intelligence rating lower than that of any other branch of the service with the exception of those in the veterinary and dental corps. We also learn from said Bulletin that the medical officer of the regular army exhibited a higher rating than did those drafted from civil practice for emergency work. It is furthermore stated with all seriousness as proof that the research workers in this new field had to deal with good human material, for

were not the physicians under test conditions members of a number of medical societies, or which one was almost invariably the American Medical Association. The erudite investigators made a great discovery, to wit, "that earnings in the medical profession are apparently not dependent upon intelligence."

Well! Well! Well! At last we have the solution of all our troubles with State examining boards. Let us first select the members of said boards by a committee of super-examiners, and these will give an intelligence rating to the examiners wherever they may be. No longer a need for pre-medical education, or for medical education for that matter; just get an intelligence rating for the dear youths, and let them go broadcast to practice in the community. *But of one fact be sure*, that we obtain an A-1 rating for the examiners. Possibly it might be a good plan to have this done by the veterinarians in order that we might make sure that the examined actually had horse sense.

THE HAHNEMANNIAN AND THE PRINTERS' STRIKE

FOR three months the large printing offices of the country have been fighting a strike among the printers, the one in which the HAHNEMANNIAN is printed suffering with the rest. The question involved is not one of wages, but of control of business and recognition of the unions to the fullest extent. The printers were never paid higher wages than at present, being in many instances so high as to make it unprofitable for many publications and publishing houses. Possibly our readers have observed the greatly increased cost of books as compared with five years ago. Many of the medical journals have been forced to increase their subscription prices. It is pleasant to learn that the HAHNEMANNIAN MONTHLY has by reason of its greatly increased subscription list managed to get along nicely without making such increase.

The continuance of the strike has necessarily created numerous difficulties in the issue of the journal, a fact which is as annoying to the editors as it is to our patrons. Matters are slowly mending, and obstacles are being removed so that shortly we expect to return to our old routine. In the meantime we thank our readers for their indulgence.

GLEANINGS

MEDICINE

Conducted by CLARENCE BARTLETT, M. D.

WASSERMANN TEST WITH SECRETIONS; EXUDATES AND TRANSUDATES IN SYPHILIS.—Klauder and Kolmer have performed the Wassermann test with secretions, transudates and exudates in a number of cases of syphilis, and report the following results: 19 specimens of milk were examined; 3 were positive. 20 specimens of saliva yielded but one feebly positive Wassermann, 30 specimens of semen gave one feebly positive result, 11 specimens of exudates and transudates were examined and all gave positive results. The explanation for this probably rests upon the fact that the fluid here resembles closely the patient's blood serum. The Wassermann test was performed with the surface fluid from a number of chancres, and with the saline extract of syphilitic nodules removed from the testicles of syphilized rabbits. All the tests yielded uniformly four plus positive reactions. These positive reactions support the belief that at the site of syphilitic lesions there may occur a local formation of complement fixing antibodies. The reaction in these circumstances is styled the local Wassermann test. The practical value of the local Wassermann test is pointed out as a possible aid in differentiating syphilitic from non-syphilitic lesions, particularly when applied to chancre fluid as a means to the early diagnosis of syphilis.—*Journal of the American Medical Association*, June 11, 1921.

OPTOCHIN.—Gruter presents tables and case reports to support his opinion that *optochin* is a specific against pneumococci, and also has a destructive, though less powerful, action on the *streptococcus viridans*. The action of the drug can be demonstrated both by animal experimentation, and by test tube experiments. The freshly cultivated pneumococci, when taken from the ulcer of the conjunctiva, have more than 100 times the resistance to optochin than have laboratory strains. The bactericidal action of optochin is not noticeably influenced by increase in the virulence of the pneumococcus.

The optochin should be freshly prepared. Solutions are not stable for more than 14 days. A combination with atropin sulphate is to be avoided, because of the formation of an insoluble optochin sulphate. Solutions of less than 1% are of no value. Ulcers with deep infiltration are best treated with repeated applications of a 5% solution for 5 minutes. Stronger solutions cause cauterization of the conjunctiva. A ½% solution for two days will free the conjunctival sac of pneumococci for at least two days. The results of the therapy applied to *ulcus serpens* depend on the location of the pneumococcal focus. The deeper the infiltration, the less the benefit. The failures in the use of optochin are not due to an optochin immunity of the pneumococci, but to lack of penetrating action due to the precipitation of albumin.—*Amer. Jur. Ophthalmol.*, Vol. 3, p. 768.

TOY BALLOONS CAUSE SKIN ERUPTION.—According to reports received by the New York State Health Department, some of the dyes used in coloring toy balloons are capable of causing a severe inflammation when brought in contact with the skin while in a moist condition. Children should be warned against the pastime of making miniature balloons from the ruptured rubber by sucking or blowing against small pieces of the balloons held tightly against the lips.

ROENTGENOGRAPHIC STUDIES OF BRONCHIECTASIS AND LUNG ABSCESS AFTER DIRECT INJECTION OF BISMUTH MIXTURE THROUGH THE BRONCHOSCOPE.—Lynch, and Stewart, (*Ann. Surg.*, March 1921) present a very interesting article on this subject. They find that bismuth mixtures (8 c.c. of bismuth subcarbonate in pure olive oil rendered sterile by boiling) can be injected into the bronchi and lungs of a living patient without danger. This the authors believe will open up an enormous field of usefulness in the study of cough, the expulsion of substances from the lung, and lung drainage. It will aid in localizing bronchial strictures and lung abscesses. The injection should be made slowly and not with a "squirt." The therapeutic benefit in the five cases in which the injection was used seems to have been great. No harm has been done in any case so far. The examinations by X-ray should be made as soon as the bronchoscope is withdrawn.

ATYPICAL EPIDEMIC ENCEPHALITIS.—Hassin, Stangl and Bailey point out that many cases of lethargic encephalitis may be clinically atypical although perfectly typical pathologically. They present notes of two cases in neither of which were any of the typical signs present, the clinical symptoms being delirium, rigid pupils, and an acute febrile course with negative serological findings. The lesion is always in the mid-brain, in the region of the Sylvian aqueduct and the peduncles, the manifestations being principally involvement of the third nerve. This did not show as ptosis or other ocular extrinsic paralysis, but as an intrinsic paralysis in the form of, rigid or sluggish pupils. In all cases therefore, of suspected epidemic encephalitis the pupils should be carefully examined, since it is impossible to conceive of the occurrence of such a widespread lesion of the mid-brain without some ocular manifestation being present.—*Journal of Nervous and Mental Diseases*.

THE PROLONGED MENTAL FORMS OF EPIDEMIC ENCEPHALITIS.—According to Petit, the mental forms of epidemic encephalitis may assume a subacute, acute or hyperacute course. Some cases are characterized by an abnormally long course which is sometimes interrupted by intermission or remissions. Petit records three cases which persisted for more than a year either continuously or with remissions or intermissions, various psychopathic syndromes such as acute delirium, mental confusion, hallucinations, impulsions and phobias, which were shown by the transient appearance of certain organic signs known to be due to epidemic encephalitis.—*Bull. et Mem. Soc. des Hop. de Paris*, April 28, 1921.

QUINIDINE IN HEART DISEASE.—Jenny has given quinidine in 18 cases of auricular flutter associated with arrhythmia perpetua or delirium cordis.

Only in one case did this remedy fail in its object. As the detailed records of his cases show, very different quantities of the drug were given to obtain the desired effect. In one case a total dose of 0.5 gram was sufficient to restore the pulse to its normal state. In this case the auricular flutter had lasted 3 weeks, and the recovery effected was maintained over an observation period of 15 months. In another case as much as 15.5 grams had to be given before the arrhythmia could be controlled. Thus while in one case the action of the drug was demonstrable within 3 hours, in another the effects could not be demonstrated until the tenth day of its administration. The dosage recommended by the author to begin with is 0.3 gram. The amount may be slowly increased and as much as 2 to 3 grams may be given in the 24 hours. Only after 10 to 14 days of unsuccessful treatment should the inability of the drug to control the symptoms be accepted. Tinnitus and ocular disturbances are indications for discontinuing the drug at once. But provided strict medical supervision is exercised, such symptoms as abdominal discomfort, headache, giddiness, and increased pulse rate may be ignored.—*Schweiz. Med. Wochenschr.*, March, 1921.

PEDIATRICS

Conducted by C. S. RAUE, M.D.

ROENTGEN RAY AND TUBERCULOSIS IN INFANTS AND CHILDREN.—As a result of a statistical study of forty-four infants and children at the Boston Consumptives' Hospital, F. W. O'Brien and F. B. Ames found that:

1. (a) The von Pirquet and intracutaneous skin reactions are reliable guides to infection with tubercle bacilli, and the number of positive skin reactions increases from infancy up through childhood, over 10 years of age, all patients reacting. (b) In twenty-six of thirty-six positive skin reactions, the roentgen ray disclosed the site of infection to be intrathoracic.
2. D'Espine's sign as a clinical index of tuberculosis of the bronchial lymph nodes is of relatively little value, being elicited only eleven times, as against roentgen-ray evidence of glandular enlargement in twenty-eight cases.
3. Three cases of positive sputum were found in fourteen diagnoses of chronic pulmonary tuberculosis.
4. Fourteen cases of chronic pulmonary tuberculosis of the adult type were found. This suggests that the so-called phthisis is more common in children than has been stated by writers of textbooks.
5. Fifteen cases, negative clinically, showed definite roentgen-ray signs of marked structural changes consistent with tuberculous infection. This raises the question as to whether these children are to be regarded as more likely to develop clinical tuberculosis and should thus be watched carefully and roentgenographed at fairly frequent intervals.—*Journ. Amer. Med. Assoc'n.*, May 28th, 1921.

ENURESIS.—W. E. Carter reviews the work of some of the older writers upon this subject and outlines a successful modern treatment of enuresis. With all possible contributing factors removed, the major treatment of enuresis should be directed toward the training of the nervous system.

Without the whole-hearted co-operation of the mother or attendant treatment will be of no avail.

The following special history and treatment blanks are used in the University of California Medical School, Children's Out-Patient Department:

Name; Age; Sex; Address; Has bed-wetting been continuous since birth? Average number of nights per week the bed is wet? How soon after retiring is the bed found wet? Does wetting the bed awaken the child? Does child sleep soundly or lightly? Is the child nervous? Does the patient take much fluid after 4 P. M.? If boy, has the patient been circumcised? Has the child ever been under treatment; What? Is there any history of worms? Were the parents bed-wetters? If so, how long did they continue the habit? Is there a history of bed-wetting in other children of the family? If so, how long did they continue the habit? Physical abnormalities? Nutrition? Nervous system? Local findings (Phimosis, vaginitis, etc.) Urine: Sp. Gr., Reaction, Sediment. Remarks.

Treatment for Bed-wetting.—Allow no fluid after ... P. M. Take the child up at o'clock and again every hours during the night and take him to the toilet. Turn the lights on and be sure he is thoroughly awake. (Wash his face with cold water to awaken him if necessary.) This step is very important. After he knows where he is and what he is about, allow him to urinate.

Keep the foot of the bed elevated about 6 inches. (Wooden blocks under the foot posts.)

If the child can write, have him write each day on a piece of paper, "I did not wet the bed last night" or "I wet the bed last night," and bring the paper to the clinic on If he can not write, have him make a cross or a circle in place of the above sentences.

Once in the forenoon and once in the afternoon, take the child to the toilet and as he urinates, command him to "Stop"—"Start"—"Stop"—"Start"—"Stop"—"Start"—"Start"—"Stop"—"Start"—"Stop"—"Start". This teaches him voluntary control of the bladder, the thing he lacks when he is asleep.

Success in the treatment depends almost entirely upon *how well the mother carries out these instructions.*

It is important that the common practice of mothers of giving an infant 18 or 20 months or older a bottle of milk "to go to sleep on" must be sternly repressed.

An important step is in ascertaining how often during the night the child wets the bed. This act must be anticipated by a few minutes and the child gotten up and induced to urinate voluntarily. As the treatment progresses, it becomes unnecessary to take him up during the night.

The education of voluntary urinary control should be begun by the end of the first year and diurnal control, at least, should be completed not later than the 18th to the 24th month. A child of 2 or 2½ years old, who habitually wets his clothing during the day and the bed during the night, can not be said to be well trained.

Experience shows that there is little need for such drugs as belladonna and strychnine in the treatment of enuresis. However, there are cases in which one or the other of these drugs may play a useful part as adjunct to the training of the nervous system.—*Archives of Pediatrics*, May, 1921.

OTOLOGY, RHINOLOGY AND LARYNGOLOGY

Conducted by JOSEPH V. F. CLAY, M.D.

THE PRINCIPLES INVOLVED IN THE X-RAY TREATMENT OF TONSILS.—Witherbee states that the proliferation cells of the lymphoid tonsil shows a much larger increase in the lymphocytes than in the germinal center of the follicles. The fibroid tonsil shows an increase in the germinal center of the follicles. The germinal center is characterized by the different forms of lymphoid cells from embryonic to mature cells at its periphery. These pathological cells found in the diseased tonsils are as susceptible to the effect of X-ray as any of the embryonic cells in the body.

The filtered dose of the ray is about one fourth to one third of the dose used in ringworm of the scalp in children. The fractional dosage at two week intervals allows the normal cells to recover while the pathological cells being unable to recover are eventually overcome. The shrinkage produces an eversion of the crypt, lessens its depth and relieves distortion and retention. The fibroid tonsil is more amenable to the ray because of the susceptibility of the immature cells in the enlarged germinal center. The effect of the X-ray on bacteria in the tonsil was positive after four weeks. The X-ray is especially indicated in cases associated with chronic endocarditis, pericarditis, hemophilia, or any co-existing conditions which contra-indicate an operation or an anaesthetic.—*Laryngoscope*, May 1921.

TREATMENT OF HAY FEVER BY AUTO THERAPY.—Shemeley has experimented with Duncan's method of treatment which has as a basis the collection of secretion from the irritated membranes. This secretion it is claimed, contains the causative proteins. The secretion obtained from the nose is filtered through a Berkfeldt filter. The filtrate is then diluted with sterile water to a dilution about the 6th. Of this 0.5 is injected hypodermically. This treatment has no value in anticipating an attack but it is claimed to produce desensitization for the following year or more.—*Journal of Ophthalmology, Rhinology and Laryngology*, June 1921.

LINGUAL ABSCESS: REPORT OF CASE.—Macfarlan reports a case of lingual abscess in a male patient 52 years of age, who presented symptoms simulating quinsy but no pain or fever. There was induration at the base of the tongue at the level of the epiglottis. On the crest of the epiglottis atheromatous patches presented. In a week the whole back of the tongue was swollen and firm. Nasal breathing was not embarrassed but swallowing was impossible and much tenacious mucous kept flowing from the mouth. Incision at this time produced active bleeding but no pus. Three weeks later the mass broke down and evacuated.—*Journal Ophth., Otol., Rhinol.*, June 1921.

PERITONSILLAR ABSCESS AND ITS RADICAL TREATMENT.—Heller maintains that the proper method of treating quinsy is the dissection out of the tonsil en masse. This is done under ether anaesthesia. He uses a blunt pointed but sharp bladed dissector. This is introduced between the tonsil and the anterior pillar at the base of the tongue. This anatomical landmark is discoverable no matter how much swelling is present above. The anterior pillar is dissected to the dome freeing the anterior attachment. The pus is removed by means of the suction apparatus and when

this has been entirely removed, the operation is completed as in the usual tonsillectomy. Forty-eight cases have been treated in this manner with two deaths. One death was due to lymphatic leuchemia. The second death occurred in a boy of 2½ years operated at 10.30 P. M., recovered from the anaesthetic and partook of food. At 11 P. M. he became suddenly cyanotic and died.—*Laryngoscope*, May, 1921.

THE DISEASED TONSIL AS A CAUSE OF DISEASE.—Blodgett records the favorable results in cases of nephritis and diabetes. He advises that in cases of septic nephritis that a search be made for a focus in the teeth or tonsils, and in the pancreatic form of diabetes look to the tonsils.—*Jour. O., O. and L.*, May, 1921.

OPHTHALMOLOGY

Conducted by WM. M. HILLEGAS, M.D.

DIAGNOSTIC USE OF FLUORESCIN ON THE CORNEA.—Myashita praises fluorescein coloring to discover and to render more distinct superficial lesions of the cornea, where oblique illumination and magnification are not sufficient for the finding of small phlyctenular and xerotic spots. The author has found that the normal human cornea is not colorable with fluorescein within sixty seconds, while with rabbits the coloring occurs after ten seconds. The human cornea is usually colored after three to four minutes, while this is possible with rabbits in thirty to forty seconds. The cornea, after coloring, needs for decolorizing a relatively long while, usually thirty minutes, and once in a while eighty minutes.—*Amer. Jour. of Ophthalmol.*, April, 1921.

SWIMMING-BATH CONJUNCTIVITIS.—Paderstein reviews our knowledge regarding swimming-bath conjunctivitis. The affection is an acute conjunctivitis, with marked swelling and congestion of the conjunctiva most marked in the palpebral portion. The follicles lie in folds and the retrotarsal fold lies in parallel folds. The lower membrane is much more affected than the upper. The course is a long one and little influenced by treatment. It affects individuals under 25 principally, probably because this is the age which frequents swimming-baths mostly. Paderstein and also Mache believe that it affects those who remain in the water longest, and who open their eyes under the water. Transference from child to mother has been observed. There are types of follicular conjunctivitis which resemble this form of conjunctivitis closely. The course and end results are against it being trachoma. *Inclusion bodies* are found, but our knowledge of these parasites is still meager. The infection comes from the water.—*Ophthalmol. Liter.*, March, 1921.

OCULAR VERTIGO.—Aural vertigo persists when the eyes are closed; ocular vertigo, on the other hand ceases when the eyes are closed. Aural vertigo is aggravated by movement of the head, and is ameliorated by the patient assuming a position of rest, especially a recumbent position.

Ocular vertigo is not affected by the station of the patient or body movements so long as the eyes are kept closed. Ocular vertigo is aggravated

by any movement of the eyes, if it happens to be a case of vertigo from a palsy of one of the extraocular muscles, and is relieved by the patient looking away from his palsied muscle.

Aural vertigo and vertigo from an ocular palsy have certain points in common. First, the vertigo from these two causes may be so much alike that from the patient's description alone one could not tell which of the two forms it is. Second, nystagmus is present in both. Third, both the nystagmus and the vertigo are aggravated when the patient looks in a particular direction, and ameliorates or ceases altogether when he looks in the opposite direction. Fortunately there are so many distinguishing features that one should not be at a loss to determine what form of vertigo is present in a given case, providing he makes intelligent use of the many methods of differentiation available. Mackenzie.—*Jour. O., O. & L.*, May, 1921.

ASTHENOPIA AND EYESTRAIN.—Hogue thinks that in this country more than half of all *headaches* are ocular in origin, the exciting causes of which are continuous near work. The site may be, in order of frequency, supra-orbital, deep orbital, frontal, occipital and temporal; bilateral as a rule, appearing usually after the near work. The refractive errors responsible are astigmatism and hyperopia. Myopia does not cause headache, unless accompanied by astigmatism. Usually the patient with the best distant vision, sometimes better than normal, is the most frequent sufferer from ocular headache. Aggravation of the symptom occurs on a moving train or car or by a "movie." Near objects blur, frequent hyperemia of the conjunctiva and also of the retina is seen. Eyes with small errors of refraction are more liable to cause reflex neuroses than those with large; a small error can be compensated, when the large one cannot. A cycloplegic is necessary to detect small errors. While the above estimate of the frequency of eye strain as a cause of headache is in general correct, care must be taken not to assume an ocular cause in grave central or other origin, and a searching diagnostic interpretation is urged.—*Wisconsin Med. Jour.*, Vol. 19, p. 109.

DEEP INJURIES BY CONTUSION.—Frenkel claims that iridodialysis and other injuries to the iris and lens capsule following contusion are, in most instances, due to sudden pressure produced from behind by the lens which has been torn loose from some of its zonular fibres (subluxated) by the hydrostatic force exerted from the vitreous. When a force is exerted on the anterior segment of the globe flattening occurs, and the aqueous and vitreous are displaced laterally at the instant of impact. The vitreous being more elastic resumes its normal position sooner than the aqueous and exerts pressure from behind upon the lens which is subluxated and pushed forward with considerable force against the iris and produces the injuries in question. In contusions applied to the side of the eyeball the direct force is the factor added to the hydrostatic phenomenon. Didier, analysing the cases of 72,312 wounded soldiers during the war, has found thirty-seven instances of iridodialysis with integrity of the globe, the separation was total in five cases, partial in the rest.—*Arch. of Ophth.*, Vol. 37, p. 393.

DERMATOLOGY

Conducted by RALPH BERNSTEIN, M.D., F.A.C.P.

RADIUM TREATMENT OF X-RAY EPITHELIOMA.—Three cases in which epithelioma or obstinate ulcerations due to professional x-ray exposures were successfully treated with radium are reported by P. Degrais and A. Bellot in the *Presse Medicale*. Three excision operations had already been performed in one of these cases and had been followed by recurrence. The ulcers soon healed under radium and the accompanying severe pain was wholly relieved. Hyperkeratosis due to the x-rays also yielded to radium, used in the same manner as for the treatment of warts.—*New York Med. Journ.*

X-RAY TREATMENT OF UNIVERSAL PSORIASIS.—John Remer and W. D. Witherbee report approximately one hundred cases successfully treated in the last year by this method. They are convinced that it is the simplest and most satisfactory method of treating this disease. The exposures are preferably given three times a week, allowing a day between each two exposures. For the first treatment, the head and arms are exposed; in the second treatment the trunk and buttocks; in the third, the legs and thighs. The treatment is concluded in from four to eight weeks, depending upon the severity of the case.—*Medical Record*.

INTENSIVE TREATMENT OF PSORIASIS.—W. H. Mook, of St. Louis, while with the American Expeditionary Forces, observed the treatment of psoriasis by means of 10 per cent. chrysarobin ointment containing 2 per cent. phenol. Mook describes this method in detail and is convinced that it is of great value in the treatment of psoriasis of the generalized type. Three ointments are necessary and the patient must be confined in the hospital and visited daily. An ointment of salicylic acid and ammoniated mercury, 5 per cent. each, in petrolatum is rubbed into the scalp once daily. For protection modified Lassar's paste is applied to the normal skin about the patches and also is used after the development of the chrysarobin dermatitis. After applying Lassar's paste to the normal skin between the patches, a 2 per cent. phenol and 10 per cent. chrysarobin ointment is applied to the involved areas. The patient should be warned in regard to the danger of conjunctivitis from the chrysarobin and be given directions to prevent its occurrence. After application of the two ointments corn starch or talcum powder is dusted freely over the entire body and the patient is advised to abstain as long as possible from walking or exercising, although it is not necessary to remain in bed. Bandaging the extremities is unnecessary and causes discomfort. A large arm chair in the room will be found to be comfortable. Applications are made once daily until the chrysarobin dermatitis begins to develop, after which they must be discontinued. A marked chrysarobin dermatitis usually appears in from three to six days, but it is less marked than when the chrysarobin lotion is used.—*Archiv. Dermat., and Syph.*

HYDRARGYRISM FROM AMMONIATED MERCURY OINTMENT IN THE TREATMENT OF PSORIASIS.—Chamot states that from 30 to 40 grains of ammoniated mercury taken internally will produce dangerous symptoms. A case observed by Beehet is interesting because of the fact that the application of an ointment containing approximately six grains to the ounce, and applied twice daily, using about two ounces a day, produced very severe ptialism in a patient who had psoriasis.—*Archiv. Dermat. and Syph.*

BLASTOMYCOSIS IN PERU.—The special home of blastomycosis seems to be the heart of tropical America. It must be distinguished from the lesions resembling it for which leishman bodies or other agents are responsible, especially the group of tropical ulcers known as espundia. The discovery by Escomel in 1914 of the blastomyces in certain cases explained the failure of the treatment which is effectual in leishmaniasis. Since then blastomycosis has been differentiated in Bolivia, Brazil, Uruguay and Paraguay, and Lozada, here a large number of advanced cases affecting the face and throat after five or six years of the disease. There was no actual suppuration in any of the ulcerations, but the parts affected increased remarkably in size, the lower lip, for instance, hanging down to cover almost the entire lower jaw. He had opportunity for postmortem examination in a large number of these blastomycosis patients who had succumbed to influenza, but he never found any signs of the process below the vocal cords.—*Anales de la Facultad de Medicina, Lima.*

UROLOGY

Conducted by LEON T. ASHCRAFT, M. D.

RENAL TUBERCULOSIS.—Caspari, *Journal d'Urologie*, presents a series of cases of renal tuberculosis which were operated. Methods of diagnosis which were employed are given, and the reasons which led to operation. Microscopic sections of the tissues removed were made and studied. The immediate and remote results of the operations are noted and show the effect of the operation.

A complete history of each case is given.

Some of the conclusions are that the disease is seen much more frequently in women than in men. The right kidney is oftener affected than the left. The ages of the patients in the present series varied from 18 years to 57 years.

The origin is almost always hematogenic. The point of development of the first focus is usually impossible to determine since the disease is so far advanced by the time operation is performed that the original site of infection is obscured.

Movability seems not to be a predisposing cause, and in one of the cases the affected kidney was fixed, the unaffected kidney loose.

The volume is often unaffected. The form seemed to be a predisposing factor in a case of congenital lobulation. The surface is variable. Sometimes the capsule is only loose to some extent, ordinarily it is adherent. Consistence depends upon the extent of lesion. Section gives vent to more or less cloudy fluid. Sometimes there is pus due to secondary infection. In eight of the present sixteen cases the organ was more or less completely destroyed. The fat is increased.

The symptoms are frequent urination, which is always present; pain; pyuria, and finally hematuria. The general health is affected, the patients for the most part are low in weight, some have febrile crises. But sometimes the patients seem in robust health.

In regard to diagnosis, palpation often fails to show anything wrong. The ureter is seldom felt, but sometimes it is felt as a hard thick cord. Examination of the urine is important. It is cloudy and always acid. Tubercle bacilli were found in twelve of the sixteen cases. The organisms cannot always be found. Inoculation of a guinea pig is often successful. Cystoscopy is

valuable, and also ureteral catheterization. The ureter of the affected side is usually affected with stricture. Chlorides and urea are diminished in the urine from the affected kidney. There is less sugar after phloridzine in the urine from the affected side than in that from the other. Methylene blue and carmine injected intramuscularly color the urine from the healthy kidney more intensely than that from the diseased organ. Experimental polyuria produced by large draughts of water aids in determining the efficiency of the healthy kidney.

As to treatment, nephrectomy alone can save the patient; medical treatment is without avail, though rarely there is, it is true, spontaneous cure.

The author uses the classic extraperitoneal lumbar route. As an anesthetic he uses two parts chloroform and one part ether. The ureter is cut down as low as possible.

THE LIMITS OF NEPHRECTOMY.—(Unterberg, *Die Grenzen der Exstirpation der Niere*, Gyogydszat, 1920, xlv. 520.) While operation is necessary even when malignancy of the kidney is merely suspected, and nephrectomy is imperative if the suspicion is verified, a more conservative attitude must be adopted in cases of simple retention and particularly in cases of stone as lithiasis is frequently bilateral and the other kidney may become involved later.

Often by means of nephrectomy, decapsulation, or puncture the organ may be saved. One must be especially careful not to perform a nephrectomy if one kidney has temporarily ceased to function and the cause of the condition is not known definitely.

The author reports 3 cases in which colleagues believed that one kidney was completely destroyed and advised nephrectomy and in which later the kidney proved capable of function (in 2 cases after the passage of ureteral catheterization). Nephrectomy is indicated only when, as the result of disease, the kidney has been destroyed and constitutes a menace to the entire organism (malignancy and tuberculosis.)

It is more difficult to decide whether, in bilateral tuberculosis, the more diseased kidney should be removed. The author is of the opinion that in such cases conservatism is indicated even when one kidney has become pyonephrotic by secondary infection. In such cases a nephrectomy should be performed as in this way a large portion of the renal parenchyma will be spared; two poor kidneys are better than one poor kidney.

Unterberg does not believe that extirpation of the more diseased organ will prevent the progress of the disease in the other. Persons with bilateral tuberculosis may live relatively long (the author observed one such case for fourteen years), whereas those in whom bilateral disease was diagnosed before operation usually succumb very rapidly after the operation. However, the diagnosis that a normally functioning organ is tuberculous already can nearly always be made by careful examination. Furthermore, the fact that one kidney is functioning normally and the other kidney is seriously diseased does not exclude beginning disease of the normally functioning organ.

• **INFECTIONS OF THE KIDNEY.** H. Cabot, (*Journal, Iowa State Medical Society*, 1921)—This paper contains an outline of infections of the kidney and a discussion of Cabot's method of diagnosis and treatment.

The author first brings out the point that the pathologist and clinician have been too far apart in their studies of the infections. The pathologist

reports tissue changes as he finds them at death, and these are usually the lesions which cause death. Such findings do not necessarily indicate conditions as they exist during the patient's life. Reference is made to the dictum that tuberculosis of the kidney is always bilateral as found by the pathologist while the clinician usually sees it as a unilateral condition.

Cabot criticises the theory that cystitis may be a primary infection and the assumption that infection of the kidney or the pelvis is an infection which has ascended by way of the ureter or its lymphatics. He calls attention to the fact that organisms which outside the kidney produce pus and abscesses have the same activity within the kidney, while organisms which rapidly tend to destroy tissue also do the same within the kidney.

The infectious lesions of the kidney may be classified according to the properties of the organism causing them. In the first group are the staphylococcus and the streptococcus pyogenes and various bacilli but the staphylococcus and streptococcus pyogenes are the most common. These organisms produce lesions close to the renal cortex, because they stop there, not being able to pass through the kidney freely.

They produce circumscribed areas of suppuration and do not spread broadcast. They are responsible for subcortical abscesses which cause perinephritis and perinephritic abscess.

In this type of infection there are frequently no findings in the urine. The urine may be normal during the entire course of the disease, but by careful examination and thorough centrifugalization the organisms may be isolated on culture.

A severe type of this infection is that in which focal necrosis occurs and frequently the entire kidney is destroyed within a very short time. Sometimes it is very difficult to differentiate between this severe type of infection and gastric ulcer or acute appendicitis.

Cabot describes this infection as always associated with fever of a septic type. There is a definite enlargement of the kidney. It is the only type of infection in which, within a day or so, a definite and tender kidney tumor can be palpated.

For the acute cases, Cabot advises surgery, either nephrectomy or nephrostomy. He states that it is difficult to determine when a kidney should be removed and when it should be allowed to remain. In doubtful cases Cabot has had less trouble when he removed the kidney at first than when a subsequent nephrectomy became necessary.

Precisely opposed to the picture of coccus infection of the kidney just described is that due to the group of bacilli commonly referred to as the colon-typhoid group. Such infections are essentially different from the coccus infections and more complicated. They constitute the majority of the kidney infections.

Pyelitis has been attributed to this group of bacteria because of the predominance of the symptoms of pyelitis but we know that the kidney is infected primarily and the pelvis secondarily. The picture is that of a low grade of infection of the kidney producing a cloudy swelling which rapidly clears up within a few days. The organisms pass through the kidney and find a resting place in the pelvis.

The effect of the organisms upon the function of the kidneys is very striking and quite opposite to that produced by the coccus infection. The coccus infection involves chiefly the cortical area, not the secreting portion

of the kidney, and does not materially lower the kidney function. The colon bacilli, however, produce a diffuse process through the secreting portion and have an immediate and very decided effect upon the kidney. Usually the functional disturbance lasts only two or three days, the function then increasing again as quickly as it decreased.

In the severe cases recovery seems to occur quickly but in those with very few symptoms a great deal of time is necessary to effect a cure. In the chronic type the author found an infiltration of the renal pelvis with organisms living in the deeper layers. This tends to produce a stiff condition of the renal pelvis which is the beginning of a vicious circle. The kidney will be destroyed eventually as a true ascending infection begins from the pelvis to the areas between the pyramids. Infection in this locality is followed by the formation of scar tissue which eventually decreases the kidney substance to about one-half.

The author believes that infection during pregnancy is very common, and because of the pressure of the enlarged uterus and poor drainage at this time, he wonders that all cases are not infected. The etiology of such infection, especially that which is so common in the first pregnancy, he is not able to explain.

The third type of infection discussed is that produced by the streptococcus which affects primarily the glomerulus. There is usually no change in the urine at any stage. The author is not sure what other organisms might produce this same infection.

In Cabot's experience there is no way of discovering acute glomerulonephritis. It is found post-mortem. Streptococci may be discovered in the urine at the height of the disease.

In the coccus group of infections surgery is indicated while in the bacillus infections operation is rarely necessary. There is a certain group of cases of cocci infection in which Cabot has found restriction of the diaphragm due probably to a very small perinephritic abscess. In such cases he has refrained from operating but insists that when a large abscess is present it should be drained at once.

For the treatment of the bacillus group of infections Cabot recommends urotropin but with this some drug such as boric acid or sodium benzoate must be given which will make the urine distinctly acid.

Cabot has had no good results from autogenous vaccine. In pregnancy, lavage and drainage of the kidney pelvis may be beneficial.

CARCINOMA OF THE PROSTATE; A CLINICAL STUDY. H. C. Bumpus, (*Surgery, Gynecology and Obstetrics*, 1921) —Bumpus first discusses the history of cancer of the prostate. He then describes the lymphatic drainage of the prostate and states that metastasis into these lymphatic glands is much more common than is usually believed. The glands usually infiltrated by this extension are the inguinal, iliac, cervical and retroperitoneal glands. The percentages of the cases thus metastasizing as shown in the report of the Mayo Clinic is given in a table.

The author then takes up the question of the symptoms of cancer of the prostate, tabulating then as follows:

Patients with metastasis with pain, 60, or 75.9 per cent. of 79.

Patients with metastasis without pain; 19, or 24.1 per cent. of 79.

Patients without metastasis with pain; 97, or 34.3 per cent. of 283.

Patients without metastasis without pain; 186, 65.7 per cent. of 283.

Total number of patients with pain; 157, or 43.3 per cent. of 362.

Total number of patients without pain; 205, or 56.3 per cent. of 362.

Cases are cited in which the entire ascending ramus of the ischium was destroyed.

The pathology of cancer of the prostate is of two types. The first is characterized by the fact that the gland is slightly enlarged and the few local symptoms are due only to metastasis, while in cases of the second type the gland is hard, nodular, and greatly enlarged and the symptoms are those of obstruction. There are also many intermediate varieties. Microscopic examination usually shows that Type 1 is more malignant than Type 2.

Radium therapy is of very little value, but gives more gratifying results in cases of small, smooth, firm, and well-encapsulated carcinomata than in cases of the other types.

Metastasis to the bones is a fairly common occurrence. The various metastases observed in the Mayo Clinic are given as follows:

	Cases
Vertebrae.....	35
Ribs.....	30
Pelvis.....	26
Femur.....	25
Skull.....	18
Sternum.....	16
Humerus.....	15

The last portion of the article is devoted to a discussion of the symptoms noted in the cases examined in the Mayo Clinic. Urinary symptoms are absent in 11.5 per cent. of cases of metastasis.

Neuralgic and rheumatic pains in men above middle age, even in the absence of urinary symptoms, should suggest the possibility of carcinoma of the prostate.

The author appends a table showing the urinary symptoms in 75 cases with metastasis and 283 cases without metastasis as follows:

URINARY SYMPTOMS

75 patients with metastasis:

	Cases	Percentage
Frequency.....	52	65.3
Difficulty.....	43	54.4
Retention.....	20	25.6
Nocturia.....	14	17.7
Hematuria.....	6	7.6
Incontinence.....	5	6.4
None.....	9	11.5

283 patients without metastasis:

	Cases	Percentage
Frequency.....	183	64.6
Difficulty.....	188	66.4
Retention.....	96	33.9
Nocturia.....	74	26.1
Hematuria.....	40	14.1
Incontinence.....	17	6.1
None.....	11	3.8



*Truly Yours,
A. H. Hartman*

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HAHNEMANN THE GREAT

BY

ELDRIDGE C. PRICE, M.D., BALTIMORE, MD.

Being the Sixth Annual Hahnemann Oration delivered before the Homœopathic Medical Society of Germantown, April, 1921.

GREATNESS is the quality which has its origin either in character or in reputation, in some instances in *both* character and reputation. The man who is born to greatness and the man who achieves greatness must have within them this germ of greatness awaiting favorable conditions for development; but the man who has greatness thrust upon him, may be great only in the imagination of those who bestow the favor.

It is the innate greatness with which we are concerned; the greatness of which Alice Carey says:

'Tis the greatness born with and in him

That makes the man great.

Sterling character, however, does not always furnish a foundation for the same kind of greatness, for there is much variation in the greatness of man. One man may be great in the field of science, another in art, another in literature, and another in honest statesmanship. Whatever be the noble attainment the superstructure must rest upon force of character, definite purpose and purity of motive.

Never was there a greater fallacy than the belief that *vox populi* is *vox Dei*. Some one has said that *vox populi* is much more likely to be *vox Diaboli*; and this may not be so far from the truth when we realize that the voice of the uncontrolled masses but represents mobocracy, what we are now fond of calling Bolshevism. It may, however, be but the

voice of a ruling minority guiding and shaping the purpose of the great mob majority, for weal or for woe.

In the early stage of his greatness the voice of the great man is never the *vox populi*; later in his course his voice may dominate the world of thought, and the majority may claim him as its very own, but he is always of the governing minority.

Of this great governing minority Christian Frederick Samuel Hahnemann is one of the most commanding figures of the comparatively recent past. He ranks with such men as Hippocrates, Galen, Galileo, Christopher Columbus, Savonarola, George Fox; not in their particular spheres of usefulness, but in kind of mentality and purpose in life, the purpose to do good to his fellow men.

We may point to many events in the history of this world, but it is questionable whether this great man did not, through his unaided efforts, leave behind him results as important to mankind as some of the greatest achievements of many centuries past.

Four hundred and twenty-nine years ago the discovery of this continent made Columbus famous for all time; three hundred and one years ago, the Pilgrim Fathers laid the foundation for the greatness of New England; two hundred and eighty-seven years ago Leonard Calvert opened the gateway to tolerance of all theological beliefs in Maryland; two hundred and thirty-nine years ago William Penn made the famous treaty with the American aborigines which prepared the Sylvan State to be one of the most important in our great Republic; and one hundred and sixty-six years ago, the 10th day of this month, was born the man who laid the foundation for scientific thought in medicine, who pointed the way out of the gloom of medical bigotry, superstition and charlatanism of his day, and formulated the principle by which therapeutics is today dominated.

In justification of Hahnemann's right to a place among the men of such high attainments, it will be necessary not merely to assert this right, but it will be necessary to consider his life history with some of its most significant phases. This will be done as briefly as consistent with the necessity of the case.

Christian Gottfried Hahnemann was a man with aspirations for his son, a man who did more or less independent

thinking, and who realized the fact that the time to begin to teach the boy was before his mind was sufficiently developed to adopt logical conclusions from his independent, individual observations and experience. When the boy was but five years of age, while yet his automatic memory was paving the way for more advanced and consciously controlled thought, this thinking father set a daily thought-task for his son. Thus began the habit of considering questions of various kinds, of differentiating fact from fallacy, and of drawing definite, legitimate conclusions. It was not long, however, before the boy had developed an ability for thinking and a taste for study that far exceeded his father's expectations, and his wish; for this boy had been destined to become a merchant, a thinking merchant it is true, and not a linguist, not a scientist, not a chemist, not a physician, not a philosopher.

The father was, therefore, disappointed to find his son far outgrowing him in his aspirations, and budding some of the ideals about which Dr. Sutherland has told us. Consequently, he set himself the task of discouraging the growth and development of his son's genius. As is usually the case the genius of the boy won the fight.

The greatness of character of Samuel Hahnemann began to manifest its existence, therefore, at a very early period of his life. This greatness was without doubt an irresistible *vis a tergo*, and such great faith had his "Master Miller" in the noble qualifications of this child that at the age of twelve years he was intrusted with the task of imparting "to others the rudiments of the Greek language."

It is but a short step from the age of twelve to the age of twenty, but in the life of a growing boy much can occur during this period. It was so in the case of Hahnemann. Steadily he had forged ahead until at Eastertide in 1775 he entered the University of Leipsic. Here he attended lectures during the day and devoted his nights "to translations from the English into the German; he also taught German and French." He was well prepared for such work, as he was now versed in eight different languages. Later his philological equipment strengthened until he was familiar with at least a dozen additional tongues, and these ultimately increased to more than a score. This was no mean accomplishment, and assisted in paving the way for still greater eminence in other fields.

At the end of two years we find the young sage leaving the University of Leipsic for the medical advantages of Vienna, and from thence he proceeded to Erlangen, where he received the degree of Doctor of Medicine from that noted University in August, 1779.

Immediately after graduation Hahnemann located successively in quite a number of different places, and it was during this period of his life that he perfected himself in chemistry, to such an extent that the great chemist Berzelius once said of him, "That man would have made a great chemist, had he not turned out a quack." From this it may be surmised that Berzelius was not a convert to homœopathy.

Among the various productions of Hahnemann in this field of chemistry we find his *Pharmaceutical Lexicon*, which "became the standard work in pharmacy" of his day, and his masterly work on *Arsenic*, in which 389 authors of the twenty-odd tongues with which Hahnemann was familiar, were laid under contribution. "This book marked a new era in the analysis and best modes of detection of arsenical poisoning." Herein are the first suggestions for the regulation of the prescription of poisons, which were later adopted to a greater or less extent. When published this book was accepted as authoritative, and "received praise from the leading scientists of the day." This accepted authority of other days may be regarded as the forerunner of our present Harrison law, though it is quite probable that neither Harrison nor any living pharmacist of the older school is aware of this fact.

Hahnemann's "Wine Test" superseded all other means then used for differentiating the presence of lead and iron in wine. In 1789 Professor Eschenbach of Leipsic wrote his unqualified approval of the test, and "Trommsdorf's Journal of Pharmacy stated that ignorance of Hahnemann's Wine Test was damning evidence of the incompetence of many apothecaries."

One of the most remarkable phases of Hahnemann's character was his intellectual versatility. In a letter to Stapf, quoted by Bradford, and written in 1826, Hahnemann says: "The German translation from the Chinese of the writings of Confucius, by Schott, has given me great pleasure." In another letter to Stapf, written in 1827, he says: "The books on entomology are excellent. I thank you for sending them to me. But they do not solve the riddle respecting spiders. To

judge from my own experiments they appear to possess a power still unknown to us to project themselves forward in the air—not on shot-out threads! In my experiments I made this impossible, and I saw one suspended by its thread from my finger, first hover in the air in a horizontal position, then dart obliquely upwards, when it disappeared from my sight.” Franz Albrecht, Hahnemann’s biographer, in writing of the noted thesis on *Hellebore* which he submitted to the faculty of the University of Leipsic, in 1812, and which was written in Latin, tells us of the magnitude of this accomplishment. In order to have written such a thesis Hahnemann must have read the works of more than fifty accepted authorities. As Bradford remarks: “He often corrects mistakes in old writings, stating carefully wherein each is wrong.” Thus he corrects a geographical mistake of no less an author than Pliny. He restores a word “in Sarrazini’s Text of Dioscorides, and says that he is fully borne out by Avicenna’s Arabic Version.” He states that “Aetius is wrong in saying that *Johannes Arcutarius* was the first to allege that *Hellebore* acts without difficulty.”

In order to have written thus exhaustively Hahnemann must have turned the pages of all these writers, and “read in Hebrew, Greek, Latin, Arabic, Italian, French, English, German.” As Bradford says: “It is needless to say that no one attacked this wonder of philosophical research. All his hearers were amazed. The Dean of the Faculty publicly tendered his congratulations.”

What can be separated more widely in the world of intellectuality than the three subjects to which attention has been called, theology, entomology, materia medica, and yet the mind of Hahnemann grasped them all and expertly surrounded them.

Probably one of the best examples of Hahnemann’s ability as a translator, and his familiarity with the art of chemistry is to be found in his translation from the French of Demachy’s *Art of Manufacturing Chemical Products*, to which both Ameke and Bradford refer at some length. The latter says: “Examination of the notes of this book reveals the marvellous chemical knowledge of the young translator. He quotes exhaustively from many authors, in many cases corrects mistakes. He cites ten authors on the preparation of antimonials, quotes works on lead, quicksilver, camphor, succinic acid,

borax. Where Demachy remarks that he knows no work on carbonification of turf, Hahnemann mentions six. Demachy quotes a French analyst without giving his name, but Hahnemann gives not only the author's name, but also the name of his book. Demachy mentions the name of a celebrated German physician. Hahnemann gives his name, his book, and the particular passage in question." Not only was the translation of this book accepted with appreciation by scientists, but many of the suggestions made therein by Hahnemann were gratefully adopted by chemists.

"Never take anything for granted, nor receive anything in any science as a truth, until you have investigated it for yourself." This was a motto taught Hahnemann many years before by his father, and there is no doubt it was his animating spirit in all his work; and to this father and this motto he owes much of his greatness in chemistry.

Undoubtedly it was owing to this thoroughness in all that he did, that he was made Stadtphysicus of Königslütter, an honor only possible to a man of great attainments in this particular field.

It was during this period of his life Hahnemann withdrew from the practice of medicine. Finding the medical profession in such a state of turmoil, with no guide beyond the untenable theories and fanciful hypotheses of supposedly educated scientists, "he adopted a simple medication, partly expectant, that corresponded more fully with his idea of the art of healing." This, however, did not satisfy what he believed to be the possibilities of his chosen profession. He felt that reform was needed, but as yet he was helpless before the great chaos of the times. In writing to Hufeland of his trials and his convictions that "a regeneration in medicine" was a necessity, he says: "It was agony for me to walk always in darkness, with no other light than that which could be derived from books, when I had to heal the sick, and to prescribe, according to such and such an hypothesis concerning diseases, substances which owed their place in the *Materia Medica* to an arbitrary decision." "To become thus the murderer or the tormenter of my brethren was to me an idea so frightful and overwhelming, that soon after my marriage, I renounced the practice of medicine, that I might no longer incur the risk of doing injury." Here was a mind fully awake to the actual conditions of his art, too honest and delicately sensitive to take

advantage of the necessities and credulity of his patrons, too ignorant to do more than refrain from applying the useless or harmful methods of his day, but with the urgent feeling that something must be done to better conditions; for not only was the human race at large involved in this maelstrom of conflicting medical dogmas, but Hahnemann had become a father, and "serious diseases," he tells us, "threatened my beloved children, my flesh and blood."

How dearly he loved those children, and how tenderly he watched over his brood we may guess from this dainty little slumber song, inspired by his baby daughter:

"Sleep daughter, gently!
The yellow bird chirps in the wood;
Lightly it jumps o'er the ice and the snow,
And quietly sleeps on bare branches—so,
Gently sleep."

Until Cullen's "Cinchona" caught his trained eye, it may well be imagined that Hahnemann knew no peace of mind. Day and night he brooded over the potential possibilities of medicine with its discouraging probabilities, and even certainties. But now he hungrily drank in the suggestive message from the learned Cullen, and realized the first faint blush of the dawn of hope. Slowly but surely, as his pathogenetic drug tests multiplied, this hope grew until finally, after six long years, it blazed into the certainty of scientific fact; and Hahnemann had developed and put into practice his benign system of medicine. He could now practice his beloved art with a precision before unknown and with fully justified confidence in the fact that at least if he did no good he would do no harm.

It was in 1796 in the journal of his friend Hufeland, that Hahnemann published his great discussion entitled, "Essay on a new Principle for Ascertaining the Curative Power of Drugs;" and it seems that at this juncture it is quite permissible to quote the paragraph which gave to the world Hahnemann's idea of the "new principle." He says: "Every powerful medicinal substance produces in the human body a kind of peculiar disease; the more powerful the medicine, the more peculiar, marked and violent the disease. We should imitate nature which sometimes cures a chronic disease by superadding another, and employ in the (especially chronic) disease we wish to cure that medicine which is able to produce another.

very similar artificial disease, and the former will be cured; *similia similibus*."

Here is an epigrammatic statement of one of the great fundamental facts of science. It is the foundation stone upon which rests the whole structure of the great principle which has come to red-thread its way through the therapeutics of all practical thinkers in the world of medicine, regardless of avowed or unavowed medical belief. And I often wonder whether or not it would at last be safe to rest this great idea in the hands of the regnant world of medical science; whether that great urge which steadily and forcefully drives the scientific mind towards all ultimate truths, will of itself accomplish the full justification and open acknowledgment of this greatest of therapeutic facts.

This profound thought, this gem, this pebble tossed into the sea of medical discord, this massive boulder whose waves of impact have not yet subsided, could only have been evolved by a great mind.

As you know, Hahnemann was not the first to test the effects of drugs upon the healthy, or to suspect an underlying principle of similarity between these effects and disease, but he was the first whose mind was fully prepared for the thorough work necessary to formulate a practical method of therapeutics. The dreams and hypotheses of his predecessors were put through the testing and refining processes of his thoroughly equipped mind, and the great principle of similars became a demonstrated fact.

Up to this period of his life Hahnemann had been more or less of a recluse. While he had been building the deep and firm foundations of a strong character, solving the many problems of conscience which confronted him, and laboring in many fields of science, he had done nothing to excite the enmity and opposition of his fellows. He was in the formative period of his life, he had not yet begun to mould mankind, but was himself being moulded and prepared by force of "the greatness born with and in him," for the man of many sided culture into which he evolved. He once said: "The man who is truly cultured, must be well versed in all positive knowledge. He even should well understand astronomy." As Albrecht says: "His knowledge was marvellous. . . . He was at home in all sciences, even in those which have no connection with medicine;" and we can well believe it, after the episode of his thesis on Hellebore.

It would be most interesting to enter further into a detailed account of his many accomplishments in this broad field of general culture, but time and space forbid. It is sufficient to have briefly called attention to some of his attainments, from the training for which he developed the broader ability for his life work of correcting the fallacies and abuses of the medical profession of his day, and suggesting many clues leading to a better understanding of many obscure questions, some of which even yet are held *sub judice*.

To briefly recapitulate his pre-therapeutic achievements: Hahnemann from his early youth was familiar with botany; numismatics at an early period claimed his attention; he was versed in astronomy; the geography of his past and present was an open book to him; he delighted in entomology; geology furnished him with knowledge of practical mining and smelting; his assiduous application made him master of a score of different languages; because of his experience in chemistry he became Stadtphysicus of Königslütter, his books being held as authority by the chemists of his native land.

In all of these fields of study, as we have seen, Hahnemann was not a tyro, but each subject to which he turned his attention was mastered. Memory is fundamental to the acquirement of all knowledge, and to have attained such great and varied expertness required not only thought and ability to compare and systematize associated ideas and facts, but his memory must have had a tenacity far beyond that of the average mind. But all this was merely preparatory to his real life work.

To take up the thread of the sage's medical triumph we must retrace our steps. In 1789 Hahnemann made his memorable translation of the second edition of Cullen's *Materia Medica*, and it was not until 1796 that he published in *Hufeland's Journal* his "Essay on a New Principle," to which reference has already been made. Following this Hahnemann was intensely occupied with his pathogenetic drug tests and his clinical verifications, publishing at intervals articles treating of his work and his conclusions therefrom—which included his discovery of the use of belladonna in scarlatina. Finally, in the year 1810, after fully satisfying himself that his conclusions were consistent with facts, he issued his great and epoch-making work, now familiar to all thorough students of the art of healing, his *Organon of Medicine*. Herein, as you

know, are contained statements of the fundamental views upon which Hahnemann based his philosophy of therapeutics. Some of these views have been rejected by those who are consistent believers in the principle of similars, and who daily strive to practice in accordance therewith; but the fundamental points upon which all agree who accept the truth of the principle, are: First, the prime duty of the physician; second, "the highest ideal of a cure," *tuto, citu et jucunde*; third, the knowledge and its application of how to remove the obstacles to a cure before beginning the treatment of a case; fourth, the application of a drug in accordance with the relationship of similars; and fifth, the use of the smallest amount of the indicated remedy that will cause a cure.

Following the publication of his remarkable work Hahnemann submitted the results of his labors to the medical profession, in his *Materia Medica Pura*, his *Lesser Writings*, his *Chronic Diseases*, and many other valuable productions; all of which evinced the master mind.

As is inevitably the case with reformers of great excesses and abuses, Hahnemann suffered his share of oppression and persecution with which we are all familiar. Finally, however, his consistency, his persistence and his faith in the truth of his great work, won for him the opportunity to demonstrate to suffering humanity the efficacy of homœopathy, and for many years he practiced his perfected art successfully, having a very large patronage while in Koethen and a still larger number of patients after his removal to Paris, where, as you all know, he died in his eighty-ninth year.

Having briefly considered some of the achievements of this remarkable man during the time of his earthly sojourn, let us now translate him to the present day of rapid transit, therapeutic nihilism, bacteriology, daring surgical procedure, and endocrinology, and in the light of modern progressive methods and well established scientific facts test the philosophy of this giant of Meissen.

There were evidently two causes for the great therapeutic success of Hahnemann, after his *Cinchona* translation; one of which was his hypnotic influence, and the other was his application of homœopathy.

I mention his personal influence first, because it is a fact that when one is enthused with the sacred truth of an idea, his very presence will carry conviction to the minds of willing

subjects. No man could have been more thoroughly convinced of the truth of homœopathy, of his own knowledge of the use of drugs, and of the certainty of curing curable patients, than was Samuel Hahnemann. When he entered the sick room he carried this positive attitude, this impressive, saving manner with him. This very authoritative imperiousness mentioned by Everest, created an atmosphere of "credulous expectancy" on the part of all concerned, and also an excitation of buoyant hope in the mind of the patient. Add to this the definite acceptance by Hahnemann of the claims of what was called "animal magnetism" (*Organon*, §293), which he firmly believed to produce results in accordance with the principle of similars, and the further fact that there is little doubt of his following the directions of Mesmer in the application of this subtle influence, and in the light of modern, practical, experimental psychology, it requires no stretch of the imagination to regard psychic influence as a favoring factor in some of Hahnemann's cures preceding or following the administration of drugs in whatever degree of attenuation.

On the other hand, if we disregard the evidence submitted by Charcot, by Braid, by Tuke, by Beard, by Gates, *et id omne genus*, and regard this personal influence of Hahnemann as merely effective in putting the patient into a receptive condition for the action of the homœopathic remedy, then we are no less logically simply believing that by his attitude Hahnemann was removing some of the causes of or obstacles to the cure of the patient, the causes being of a psychic character; for which attitude we have authority not only in accordance with § 3 of the *Organon*, but also in accordance with common sense.

It matters not, therefore, which view we take, modern science must sustain Hahnemann in his attitude either of removing obstacles that might *prevent* a cure, or in applying suggestive therapy to *aid* in the cure. Since the day of Hahnemann the study of both objective and subjective influence has pushed much further into the realm of the unknown, but from his pioneer tendency manifested in all the fields which he entered, we are quite justified in believing that were he now living Hahnemann would be among the best informed of psychologists, as he was in the day of his earthly activity.

As to his attitude towards surgery, we feel sure there would be no conflict between his views and the views of the

conservative men who are qualified to practice medicine. By this it is meant that so much has the mantle of surgery been made to cover in the present day, largely because of the therapeutic nihilism which teaches that, barring a few drugs, materia medica is quite negligible, these extremists cannot be taken as qualified medical practitioners, however expert they may be as surgeons; hence, we insist that the rationality of Hahnemann's attitude toward modern surgery must be left to the judgment of the conservative practitioner and not to the surgeon or to the nihilistic therapist. Hahnemann taught practically that after all causes of the diseased state of the patient had been removed by medicine, and yet the patient did not recover because of some insuperable physical bar to medicinal cure, then surgery might be summoned to remove the obstacle, or, on the other hand, surgery might be able to remove some physical cause of the derangement, after which the indicated remedy would complete the cure. This is common sense, and all logical minds of the present day must stand on the same platform with Hahnemann in this question of the sphere of surgery. Hahnemann did not object to surgery when indicated, for as a matter of fact, in his "Lesser Writings" he does not hesitate to recommend surgical interference when necessary. (Vide, Lesser Writings, pp. 39-53-55.)

We now come to the field of bacteriology, from which much aid has been derived by the modern physician in healing the sick. How would Hahnemann have regarded this departure from the drug therapeutics of his day?

Fundamentally, the first fact we must recognize is, that any agent from either the animal, vegetable or mineral kingdom, capable of causing a deviation from the line of health, may be regarded as a therapeutic possibility. Consequently all such agents may further be regarded as qualified to produce conditions in the healthy which may be similar to conditions sometimes found in the sick. Such being the case, there is no reason for supposing that Hahnemann would have opposed the use of any bacteriological product, capable of acting homœopathically in relation to the pathological condition of the patient for whom it might be prescribed. In relation to these micro-organisms and their products, it is quite in point to call attention to the fact that "These agents are known as anti-toxins, toxins, bacterins and sera. As the name implies,

the anti-toxin acts directly upon the toxin which is causing the trouble, and apparently has little influence upon the general organism, simply destroying the toxin, and therefore does not act in accordance with any therapeutic principle, any more than does a chemical agent introduced into the organism for the purpose of neutralizing some other substance by direct contact, which otherwise might work disaster.

"With the bacterins, the sera and the toxins, it is different. These substances act definitely in accordance with some therapeutic principle, producing results by causing the organism to dispose of the harmful agent. In fact, the bacterins, the sera, and the toxins of the various bacilli from which they are derived, when given to cure the conditions similar to those they cause, act in accordance with the principle of similars, it matters not by whom they are used. Whether they raise the opsonic index and stimulate the appetite of the physiological phagocytes of the given organism, makes no difference whatever to the principle which controls their action. Incidentally, it may be mentioned that the same may be said of any and all dynamically acting drugs, as bryonia, phosphorus, or aconite, for example. It is by no means certain whether they act in accordance with Wright's theory, by a process of stimulation of the organism directly, or in some manner entirely unexplained; but whatever may be the true *modus operandi* the fact is evident that they do cause curative results when prescribed in accordance with the homœopathic principle."

When intelligently applied, therefore, no agents can be more completely and thoroughly homœopathic to diseased people than can the bacteriological products, and were Hahnemann living he would doubtless be just as much an advocate of their use as of any other pathogenic agents.

There is another broad field of investigation which is claiming the attention of many students of vital phenomena; a great *terra incognita* surrounded by impenetrable darkness. I refer to endocrinology. Comparatively little is known of the functions of the various ductless glands; but from the little information that has been gleaned we are led to think that these bodies perform a work in the human organism upon which life depends; that when they stop functioning death is our portion, and that no one of these glands can cease its work without the health of some part of the organism being seriously affected. Without entering into a detailed consideration

of this subject, it may be said that it is reasonable to suppose that any agent which acts decidedly upon the health of the human being, must in some way influence the functioning of one or more of the endocrine glands. Accepting such an assumption we are driven further to believe that all drugs, whether of animal, vegetable or mineral origin, cause characteristic effects through these glands, either directly, or primarily through the organs and tissues whose functions depend upon the state of vigor of these glands. This being the case it must be a fact that a thorough study of drug pathogenesis will ultimately evolve much more knowledge of endocrinology than we now possess. Strong suspicions already have arisen that certain drugs act definitely upon certain of these glands, notably iodine upon the thyroid and nux vomica upon the suprarenal glands.

Assuming our surmises to be correct, there is little doubt that the learned Hahnemann would have welcomed the incursions into this vast field, and have seen quite as quickly as the most expert of modern investigators the bearing of endocrinology upon homœopathy and the healing of the sick. In fact, Dr. August Korndoerfer has already advanced the view that Hahnemann was far ahead of the scientists of his day in his approach to this obscure field, through his psora theory.

Closely allied to the vast ocean of the infinitesimal is Hahnemann's belief in the efficiency of olfaction of greatly diluted drugs, but while we may not have found it wise to resort to this method of striving for therapeutic results, yet such a possibility of the dissemination of drug influence is no more remarkable than the profound influence of the emanations of radium upon malignant dermal degeneration and glandular structure—without appreciable diminution of the metal—that has been demonstrated and accepted by even the most materialistic of physicians of the present day.

Hahnemann rejected no demonstrated facts, and were he now living he would welcome the proven facts of scientific research, for, like Arago of old, he was convinced that no truth great or small could go contra to any other truth great or small. *He would have welcomed the searchlight of modern science in all fields of investigation.* So that when we are confronted by the question of the probable attitude of this wise man in relation to any of the theories of our day, the answer must depend upon whether the theory is founded upon fact.

Such was the character and some of the attainments of Samuel Hahnemann, the man of efficiency. From his early childhood, like Charles Darwin, he was in search of facts, whether his inquiries were in the field of astronomy, of geography, of geology, of theology, of chemistry, of entomology, or of medicine; and the many fields he discovered stood at the threshold of many and varied treasure houses in the world of science.

While it may not be generally recognized by his successors in this world of honest endeavor, yet careful study of the labors of this giant reveals the fact that his great work of reformation did not end with his death. When great truths are shown to the world nothing can prevent their ultimate acceptance by mankind, and so it was that when Hahnemann dropped his torch of truth it was caught up by others of kindred spirit, who by persistent effort have made continuous logical progress up to this day of wonderful revelations of the many secrets of which Hahnemann long ago dreamed.

Upon some of the minor points in his therapeutic beliefs there may not be established an harmonious consensus of opinion, but the main facts are consistent with the revelations of scientific research, and in these all agree. The world has grown apace since his day, and is still growing, despite the extreme variance of the great pendulum of evolution, and the day will come when the normal perspective of civilization will be far enough away from the time of Samuel Hahnemann, to be adjusted to the realization that in those old days he was of the breed of giants, the peer of Hippocrates, of Galen, of Bacon, of Harvey; a man of profound achievements. And it will be fully realized that the further into the unknown the investigations of science are projected, the more certainly and completely will the aims and aspirations of Hahnemann be demonstrated as prophetic revelations.

The foundation of all his work rested upon his strength of character, and with this strength of character as an instrument the germ of his high aspirations and ideals "born with and in him" evolved this man of the ages, this example for all men: *Hahnemann the Great*.

THE LEUKOCYTES IN SURGICAL CONDITIONS OF THE ABDOMEN**JOHN G. WURTZ, M.D., PITTSBURGH, PA.**

(From the Wallace Laboratory, Pittsburgh Homœopathic Hospital.)

(Read before the Homœopathic Medical Society of Pennsylvania, Sept. 23, 1921.)

SURGICAL conditions of the abdomen in the majority of instances involve inflammation and whether this inflammation is acute or chronic the essentials are ultimately the same.

Inflammation is the reaction of the tissues to injury and though basically chemical changes may be said to be responsible for the reaction, the cells of the body play a most important part. Of all the cells figuring in inflammatory processes, particularly acute processes, the polymorphonuclear neutrophils are the chief. These cells are the first to emigrate to the affected part and early are the only ones found. Coincident with this migration is a reproduction of these cells by the bone marrow in numbers greater than is ordinarily necessary for the replacement of those destroyed in the natural wear and tear of the body's activities. This leukocytosis is usually in proportion to the quality and quantity of the etiological factor, except in cases in which the local and general injury is so great that a depression of the leukopoietic elements results.

Various substances have their influence upon and call forth different varieties of leukocytes. Pyogenic organisms call forth polymorphonuclear leukocytes; intestinal parasites, eosinophiles; typhoid bacilli may stimulate the formation of transitional cells and tubercle bacilli, lymphocytes. Since abdominal inflammations are complicated by pyogenic organisms, as a rule, it will be seen that the polymorphonuclears are the important cells. In this connection it may be generally stated that the greater number of these cells, the more acute the condition; while the mononuclear cells or lymphocytes speak for chronicity. In other words, in the first instance the inflammatory process is still inadequate; while in the latter the reaction is adequate, because the lymphocytes, the second line of defense, have to do indirectly with connective tissue formation.

There have been a sufficient number of blood counts made

to compile the leukocyte picture not only in health, but also in nearly all diseases. The whole matter is concisely given by Todd, who states, "In a general way the percentage represents the severity of the infection, or more correctly, the degree of toxic absorption; while the total count indicates the patients' power of resistance. With moderate infection and good resisting power the leukocyte count and percentage of polymorphonuclears are increased proportionately. When the polymorphonuclear percentage is increased to a notably greater extent than is the total number of leukocytes, no matter how low the count, either very poor resistance or a very severe infection may be inferred." Accepting 10,000 as the maximum normal count and 75 as the normal polymorphonuclear per cent., the percentage of polymorphonuclears should, to maintain the proper proportion, increase one to every one thousand increase in the total count. A study of this relationship is of practical value. For example, a total leukocyte count of 11,000 with 87 per cent. of polymorphonuclears points to a condition more grave than is indicated in a total count of 14,000 with a polymorphonuclear per cent. of 75.

This more or less arbitrary arrangement is found valuable in the Pittsburgh Homœopathic Hospital and herewith are presented tables of the last ninety-nine surgical cases presenting pathology of the abdominal organs, and in which cases total and differential leukocyte counts have been done. The tables are compiled from the hospital records and in all but a few instances the diagnoses confirmed by the findings at the time of operation.

In the table showing the count in acute appendicitis there is a total of 56 pre-operative counts in 50 cases. Of these 56 counts, 47 are 10,000 or more and of these 47, 43 have a polymorphonuclear percentage of 75 or over. Of the 47 instances with a leukocytosis of 10,000 or more the temperature is 99 or over in 33 instances. Of the remaining 9, with a total count of less than 10,000, 7 gave a polymorphonuclear percentage of 75 or over, and in these same 9, 6 gave a temperature of 99 or over at the time the count was made. The average total count in 56 instances in acute appendicitis is 14,500, and the average percentage of polymorphonuclear leukocytes in this same group is 82. It will be noted that in acute appendicitis the transitional leukocytes are not conspicuously absent.

ACUTE APPENDICITIS

RECORD No.	TOTAL Count	Pol. %	LYMPO. %	TRNS. %	EOSIN. %	TEMPERATURE TIME OF COUNT	PULSE TIME OF COUNT	TIME ELAPSE AFTER FIRST SYMPTOMS	REMARKS
75639	30,000	91	9			98	120	12 Hours	
74403	10,400	79	21			98	128	6 Hours	
74665	14,400	87	13			99	70	24 Hours	
76785	12,000	80	17	3		99	100	12 Hours	
77180	16,400	89	11			100	100	17 Hours	
77233	14,800	89	11			100	88	3 Weeks	Abscess
75212	14,800	79	19	1	1	99	72	24 Hours	Abscess, Septic Peritonitis
74512	10,100	79	21			99	68	12 Hours	
77152	18,000	85	14	1		99	84	7 Hours	
75667	15,500	80	16	4		100	124	10 Days	
75799	29,900	92	7	1		102	128	3 Days	Gangrene, Rupture, Peritonitis
76661	19,200	98	2			100	100	6 Hours	
74361	11,800	84	16			100	80	2 Days	Abscess
74365	15,800	84	15		1	100	96	24 Hours	
75437	12,400	85	14	1		100	88	12 Hours	
74603	14,400	84	16			99	108	24 Hours	
74657	10,600	86	14			98	72	24 Hours	
74042	15,100	87	13			99	84	24 Hours	
75182	13,900	92	6	2		99	88	12 Hours	
74459	12,900	85	15			101	108	3 Days	Abscess
76629	13,200	78	21		1	99	88	8 Hours	
76581	15,800	93	6	1		102	112	6 Hours	
77739	14,600	80	16	4		99	72	10 Hours	
77979	21,000	87	12	1		98	120	24 Hours	
77936	14,600	79	17	4	2	99	88	3 Days	
78619	18,600	88	12			99	84	5 Hours	

CHRONIC APPENDICITIS

RECORD No.	TOTAL COUNT	POLY. %	LYMPHO. %	TRAN. %	EOSIN. %	TEMPERATURE TIME OF COUNT	PULSE TIME OF COUNT	TIME ELAPSE AFTER FIRST SYMPTOMS	REMARKS
77278	5,800	53	46	1	1	99	88	3 Weeks	Salpingitis associated
74596	7,800	76	23			99	88	5 Months	
77096	6,400	73	27			97	84	1 Week	
77381	7,200	43	54	1	2	97	78	3 Months	Uterine Fibroid associated
77626	8,000	76	21	1	2	98	80	1 Month	
77526	10,100	76	18	3	3	97	84	3 Months	
76427	5,500	71	22	4	3	99	90	2 Months	
75654	8,200	63	33	2	2	98	84	1 Year	
76448	4,700	70	22	6	2	97	96	2 Months	
75403	15,400	75	17	7	1	99	88	1 Month	
75681	6,600	70	28	2	3	98	80	Years	
75402	8,300	52	41	4		98	76	Years	Tuberculosis of Appendix
76914	5,500	79	18	3		99	78	2 Months	
77088	8,000	70	30	2	2	99	84	1 Month	
76043	11,300	67	27	4	4	98	82	3 Weeks	
75964	6,000	63	30	3	4	98	82	1 Week	
76073	7,600	54	43		1	99	88	6 Days	
77272	5,900	55	31	5		98	80	3 Weeks	
78068	7,200	68	40	2	1	98	72	2 Weeks	
77665	9,400	52	46	4		99	74	Years	24 Hours Later
78067	7,600	73	23			99	100	2 Weeks	24 Hours Later
77273	16,000	53	47			98	112	Years	24 Hours Later
77057	15,800	68	32		6	98	92	Unknown	Acute attack over chronic after Tonsilectomy. 24 Hours Later
76635	13,000	83	16	1	1	99	86	Years	24 Hours Later
76635	6,000	70	23	3	1	98	132	Years	24 Hours Later
75593	12,700	66	4	3	1	101	84	Years	24 Hours Later
75593	24,400	92	36	2	1	98	80	Years	24 Hours Later
75593	9,600	61	29	7	2	98			24 Hours Later
76623	11,300	68	36						
76623	9,600	55	35						
76623	14,200	66	31						

VARIOUS CONDITIONS OTHER THAN APPENDICITIS

RECORD No.	DIAGNOSIS	TOTAL COUNT	POLY. %	LYMPHO. %	TRANS. %	EOSIN. %	TEMPERATURE TIME OF COUNT	PULSE TIME OF COUNT	TIME ELAPSE AFTER FIRST SYMPTOMS	REMARKS
76498	Peritoneal Adhesions	7,800	72	23	5		99	104	1 Month	Chronic Appendicitis Associated Chronic Appendicitis Associated
76270	Perinephritic Abscess	11,400	77	21	2		101	112	2 Months	
77075	Perinephritic Abscess	24,000	88	11	1	1	99	96	2 Days	
76612	Pyelitis	11,200	74	21	4		103	108	1 Week	
77512	Pyelitis	14,200	83	16	2		103	100		Appendicitis Associated
77330	Chronic Oophoritis	7,200	81	19		2	98	88	8 Months	
75803	Duodenal Ulcer	5,400	70	22	6		97	84	5 Hours	
77732	Ruptured Tubal Pregnancy	9,400	73	22	5	1	99	88	10 Weeks	
76933	Cholelithiasis	7,600	74	20	5		98	100	10 Months	Appendicitis Associated
77445	Pyosalpinx	11,600	72	28	2	1	101	88	2 Years	
77630	Abdominal Adhesions	17,400	72	23	4	3	99	64	3 Days	
77935	Pyelic Stenosis	7,800	56	37	4	3	98	70	2 Weeks	
76284	Cholecystitis	11,500	62	38	3	2	97	88	6 Months	Subsequent daily counts
77985	Gastric Ulcer	7,800	48	47	3		98	88	2 Weeks	
74053	Cholecystitis	15,100	80	19	5	2	98	68	7 Years	
74778	Gastric Ulcer	7,400	56	38	1		98	72	2 Weeks	
74078	Gastric Ulcer	7,200	66	33		3	98	72		Stones, Appendicitis Appendicitis Associated 24 Hours Later
74192	Cholelithiasis	11,600	78	22	1		98	104	4 Hours	
78036	Abdominal Adhesions	10,800	57	39	2		100	104		
78268	Diverticulitis	16,600	58	36	2		100	112		
		17,200	68	30	3		100	104		
		19,400	66	31	1	3	99	92		
		26,300	83	13	3	2	99	100		
75730	Cholecystitis	20,600	80	17	3	2	97	84		
75624	Adhesions-Ileo-cecal	9,400	79	20	6	2	101	76		
76070	Acute Salpingitis	13,600	78	16	4	2	99	80		

In the second table is shown the results of 32 counts in 26 cases of chronic appendicitis. Of these, 11 were 10,000 or over and of the 11 only 4 gave a polymorphonuclear percentage of 75 or more, and in only 4 instances was the temperature 99 or over. In 8 instances when the total count was less than 10,000, the temperature was 99. The average total count in these 32 instances is 9,200; while approximately 67 is the average percentage of polymorphonuclear cells. Contrary to the observations of Friedman, the percentage of transitional leukocytes in these cases was not remarkably increased.

In the third table is shown the results of 27 counts in 23 cases covering various surgical conditions of the abdominal organs. Of the 27 counts 17 gave 10,000 or more leukocytes and of these 17 only 9 gave a polymorphonuclear per cent. of 75 or over. In this series the percentage of polymorphonuclears was 75 or over in only 2 instances when the total count was below 10,000. In 14 of the 17 instances with 10,000 or more polymorphonuclears the temperature was 99 or more. When the total count was less than 10,000 the temperature was 99 or more in 2 instances. In the 17 instances giving 10,000 or more as the total count the average count was 15,400 with slightly over 73 the average per cent. of polymorphonuclears. This points to the relative chronicity of these particular cases; while each table demonstrates the relationship which exists between the total leukocyte count and fever. The observations of Smith are quite in keeping in this connection, that is, when the fever and total count correspond, each high or low, the significance is not so great as when the leukocytosis is high and the fever low or vice versa.

Levison calls attention to the fact that a leukocytosis can not be relied upon to differentiate intraabdominal hemorrhage from appendicitis or other acute inflammatory conditions of the abdomen, because in hemorrhage one finds an increase of leukocytes due not only to the tendency of the body to remove and repair the damage done; but also to the increased bone marrow activity in the attempt to replace the blood lost. In such instances other clinical signs are first to be considered. Banhoff, using the slight leukocytosis of digestion as an index, observes that in cancer of the stomach there is no digestion leukocytosis, or if it is present is only slight; whereas in ulcer a digestion leukocytosis of 2,000 to 5,000 exists. This finding like all others is not infallible, but is well worth considering.

Friedman found that pyloric ulcer has no leukocytosis, but does not mention that of digestion. He mentions a polymorphonuclear leukocytosis in nonpyloric ulcer and an absence of this in duodenal ulcer, unless there is perforation.

Audain reminds us that in organs rich in the lymphoid element, the mononuclear leukocytes are the pivot of defense; while in those tissues poor in the lymphoid element, the polymorphonuclears are the defensive forces. This observation is in keeping with Adami who states that in the younger subjects the lymphocytes predominate and probably are concerned in the manufacture of substances to immunize the body against bacterial infection from the lumen of the bowel. Cabot found in pyogenic infection of the lymph glands a lymphocytosis rather than a polymorphonuclear one.

These last statements show what a variable count can be found and are, in a sense, the exceptions which prove the rule that a total and differential leukocyte count is a valuable aid in the diagnosis and prognosis of surgical conditions of the abdomen.

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A SEASON OF SURGICAL CLINICS

BY

HERBERT L. NORTHROP, M.D., F.A.C.S.

To the Alumni and Students of Hahnemann Medical College: Sir Berkley Moynihan said, "Much has been written but little is known. It is in surgery, as it is in finance—much poverty and much paper may coexist."

I will paraphrase this pertinent statement of Moynihan's by saying: "In the surgical clinics at Hahnemann Hospital during the winter of 1919-20, much has been done, and something is known. It is in surgery, as it is in finance—an ounce of experience is worth many pounds of precept."

Nevertheless, in our clinics of the teaching season just referred to we have had both precept and experience presented to us hand in hand, advantageously and practically blended.

I take pleasure in presenting, therefore, to our alumni and the gentlemen of the senior and junior classes of Hahnemann Medical College of Philadelphia, a summary of the surgical cases treated in my clinics during the season of 1919-20. This will give me an opportunity to impress upon you the comprehensive variety of subjects covered, the unsurpassed quality of the material offered, and to congratulate alumni and students upon being connected with a medical college where such exceptional clinical advantages are possible. In accepting this statement I ask you to be sure to include also the admirable clinics which have been held by my associates, Doctors Ashcraft, Van Lennep, Roman, Leopold, Elliott, Morton and their assistants. I am glad of the opportunity, too, to refer with pride to the faithfulness and the conscientious work done by our valuable clinical nurses, including our chief clinical nurse, Miss Antroibus. The surgeon and the student do not begin to realize the immense amount of work required to make and prepare the innumerable articles essential to the success of so many surgical operations and the intense effort called forth in the team-work which is always necessary in surgery, but pre-eminently so in "putting over" a teaching clinic where many things are made subservient (the operator's and nurses' comfort) to the clinching of the surgical points and lesions in the mind of the student.

During the session of 1919-20 I held 31 clinics in 31 weeks; you see our students drew no blanks. All told 114 cases were presented and treatment of one kind or another was instituted. This makes an average of nearly four cases to a clinic of two hours' length and an average of 31 1/2 minutes to each case.

Here follows a list of cases presented and treated:

- | | |
|--|---|
| Abscess, hip, 1. | Gastric ulcer 2. |
| Abscess perineal, 1. | Glenard's disease 2. |
| Aneurism, cirsoïd, 1. | Goiter 4. |
| Appendicitis, 16, acute 7, subacute 4, chronic 2, following abortion 1, acute and peritonitis 2. | Hare-lip 2. |
| Appendicostomy for mucous colitis 1. | Hare-lip and cleft palate 2. |
| Brain tumor (decompression) 1. | Hernia (21). Inguinal 10, single 4, double 4, congenital 2, umbilical 1. |
| Carbuncle 1. | Hydrocele 3. (Tapped 1, radical operation 3.). |
| Carcinoma (15). Breast 4, chest wall 1, caecum 1, lower lip 1, penis 2, stomach 1, upper jaw and mouth 1, gall-stones and cancer of gall-bladder 1, rodent ulcer of nose 1, tongue 1, rodent ulcer of ear 1. | Impacted tooth 1. |
| Cervical adenitis 1. | Infection of groin 1. |
| Cheiloplasty 1. (Secondary following operation for cancer of lower lip.) | Lipoma 2. |
| Crushed leg (debridement) 1. | Meningocele 2. |
| Cyst of breast 3. | Fibroma molluscum 1. |
| Dislocation (ancient) of hip 1. | Myositis of deltoid 1. |
| Dislocation of shoulder 1. | Necrosis of testicle 1. |
| Empyema 1. | Paralytic pes cavus 1. |
| Epilepsy, trephine for 1. | Paresis 2, intraventricular injections for. |
| Fractures (11) and dislocation of knee-joint 1. Epiphysis of lower end of femur 1. | Perigastric abscess 1. |
| Middle of femur 1, end result of plating 1, supracondyloid of femur 2, humerus 1, patella 1, (open treatment), skull 1, tibia and fibula 1, tibia, spiral 1. | Plastic and fascial transplant for contracted tendons of hand 1. |
| Gall-stones 2. | Pseudomyxoma peritonei 1. |
| Gangrene of toe 1. | Skin grafting 2, following operation for carcinoma of breast 1, following operation for syndactylism 1. |
| | Spina bifida 1. |
| | Stricture of esophagus 2. |
| | Stricture of urethra 1. |
| | Syndactylism 1. |
| | T. B. of kidney 1. |
| | Undescended testicle 2. |
| | Varicocele 2. |
| | Varicose veins of leg 1. |

BRAIN TUMOR.—This patient, a man, was almost totally blind from intracranial pressure and suffered from severe headaches. No effort was made to find and remove the tumor; this was deemed surgically inexpedient. A right-sided temporal decompression was performed in order to relieve intracranial pressure. The patient's headaches were immediately relieved and his eyesight improved considerably, but slowly. A good-sized hernia-cerebri followed the decompression, which

was the object sought by the operator, and indicated the degree of relief of the intracranial pressure.

CARBUNCLE.—Why incise a carbuncle and leave the greater part of the strangled, infected and gangrenous tissue behind, to continue its rotting and infecting process? Use the carbolic cautery, if you please, but why not *cut out* the carbuncle? If you will do this, the patient will get well more promptly and thoroughly, and the wound will granulate nicely and the final scar will be astonishingly insignificant.

CARCINOMA.—Our cases of carcinoma of the breast were treated by radical excision, by either the Rodman or the Willy Meyer operation—amputation of the breast, of both pectoral muscles and removal of the entire axillary contents, glands and fat. Epithelioma of the tongue, lip, auricle and penis we destroyed at one sitting by electro-thermic coagulation, a method which has much to recommend it. At one of our clinics we remember using the expression, “the passing of the knife in the treatment of cancer,” and explaining that while the knife will never be discarded completely in the treatment of malignant disease, it has already begun to take a back seat. (But this is a big subject, for another occasion.)

Our case of cancer of the caecum we palliated by doing an ileo-sigmoidostomy. By this operation the bowel obstruction was overcome and the patient relieved.

EMPYEMA.—Prompted by experience we still believe that rib-resection, with adequate drainage, is better than the closed methods of treating empyema. In the later stages of the after-treatment the injection of bismuth paste, 10 per cent. of bismuth carbonate in white vaseline, will often completely obliterate the remaining empyemal cavity.

FRACTURES.—We are justified in making the following statements on the treatment of fractures: Every patient with a broken bone should be anesthetized for examination, reduction of the displacement and application of the splint, or dressing, whether said patient is at home or in a hospital; X-ray examination should be made, if possible, especially *after* reduction and immobilization; a Hawley table is necessarily a hospital luxury, whose great value, nevertheless, cannot be overestimated; open reduction and treatment of fractures must be practiced only in hospitals and by experienced surgeons alone. If so carried out, open methods yield ideal results. Our cases of fractures, treated this winter, verify these statements.

GALL-STONE DISEASE.—We believe that cholecystectomy is being, and should be, performed less frequently than formerly. Again, of the greatest necessity though it be, a short period of drainage following the removal of gall-stones is not sufficient in many cases to completely cure the bile-duct catarrh and to correct the bile-duct bacteriology. It is, therefore, advantageous to irrigate and medicate the duodenum by the duodenal tube or "bucket" and a solution of magnesium sulphate, and to place the patient on a more or *less* strict milk diet. This post-operative treatment is administered and regulated best by the internist, or gastrologist.

GOITER.—Two cases of simple and two of exophthalmic goiter were operated upon. Partial thyroidectomy, by trans-frontal section, was done in the simple cases, and the superior and inferior thyroid arteries were ligated in the toxic cases. In slang parlance it is a "cinch" to operate on a simple goiter; it is a pleasure because it tests the operator's practical knowledge of neck anatomy and his ability to keep out of technical trouble; and in toxic cases it is remarkable how great the relief from distressing symptoms and the improvement which follows ligation. In the latter class novocaine is the accepted anesthetic. Therefore, we are justified in agreeing with eminent authorities the world over, that the treatment of goiter is pre-eminently surgical.

HERNIA.—Of course, we had a large number of cases of hernia; we always have. The Beckman operation for inguinal hernia and the Mayo for umbilical hernia are the most satisfactory methods for the radical cure of these two varieties. Special emphasis was laid upon the three essentials for a permanent cure of an inguinal hernia, viz., high ligation of the hernial sac, secure buttressing of the walls of the inguinal canal and primary wound healing.

HYDROCELE.—We had to treat one very large hydrocele by tapping because the patient was suffering from serious cardiac disease. In this case we injected the man's own hydrocele fluid subcutaneously, *a la* autoserotherapy. For the radical cure of hydrocele I prefer the Kocher operation, which consists in the removal of the greater part of the parietal layer of the tunica vaginalis, leaving only enough to closely invest the testicle, and sewing it together over the gland. I have been doing this operation for many years and have never known a case to recur.

MYOSITIS.—Our case of myositis of the deltoid proved very interesting, because it looked for all the world like a fracture of the shaft of the humerus, which diagnosis was indulged in by the students until the X-ray negative proved the humerus to be intact.

PARESIS.—Two cases of paresis were treated by the intraventricular injection of salvarsanized serum. After the removal of 20 to 25 cc. of cerebrospinal fluid, a like quantity of the serum was injected into the right lateral ventricle. But the results do not recommend the treatment; it is a question whether the slight improvement which followed the injections was due to them or was coincidental with the natural variations in the symptoms of the disease.

SYNDACTYLISM.—In the case of syndactylism a brilliant result was obtained by the Didot method, supplemented by a few Thiersch skin grafts, and this after the button-hole method had failed ignominiously in another hospital.

RENAL TUBERCULOSIS.—The case of tuberculosis of the kidney was a typical one: A young man with an active pulmonary lesion had frequent micturition both day and night, occasional hematuria, aching and dull pain in the loin and pus in the urine. The tubercle bacilli were found in the pus. The boy had an opportunity to live in a mountain bungalow and we believed that the removal of his tubercular kidney would ultimately favor his chances of improvement. Accordingly I did a nephrectomy, removing a kidney studded with tubercular abscesses. His operation wound healed promptly and he made an excellent surgical recovery. I have not heard from him since he left the hospital.

Nearly all of these cases were examined and studied by members of our senior class, whose work was conscientiously performed and who received invaluable practical experience therefrom. I am convinced that our subclinic system of teaching and our ward work are highly successful, and I am proud to be able to inform the alumni and students of Hahnemann that this college was the first in Philadelphia many years ago to inaugurate the subclinic method and to bring it to its present high degree of excellence. To Dr. W. B. Van Lennep and his associated teachers belongs the credit for this.

ANESTHESIA.—Ether was administered generally, and chloroform occasionally; nitrous oxide, alone or with ether, was given frequently; novocaine 1 per cent. and adrenalin were

used as a local anesthetic; spinal anesthesia was employed once. No death or serious complication or accident occurred from the anesthetics. Squibb's ether and chloroform were employed; stovain was the drug used in the case of nerve-root anesthesia.

SUTURE MATERIAL.—All internal or buried sutures were of chromitized catgut or of kangaroo tendon. Small sizes only of catgut were used, viz., No. 0, No. 1 and No. 2. In closing wounds and suturing the skin a subcuticular suture of No. 0 catgut, doubled, was employed routinely. Sometimes iron-dyed silkworm or Michel clips were used; for wounds about the face and neck horse-hair was the favorite suture. The Johnson & Johnson suture material was used exclusively.

Our wound healing in the cases operated upon was entirely satisfactory, except in a few cases which were the victims of a rather serious streptococcic infection that invaded our hospital in February and March. Several patients in the obstetrical and gynecological department, perfectly clean cases to begin with, thus became infected and died. Only one of our surgical cases died. This infection was repeatedly proved to be streptococcic by our experts who made and administered autogenous and stock vaccines to these cases with favorable results. Our pathologists also made repeated bacteriological examinations of our clinical and surgical supplies in order to detect any source of infection. I was delighted with their report on the sterility of my sealskin solution, with which the field of operation is painted, or coated, before operation. This is a strong recommendation for the solution which I have employed now for seven years, and is only one of its many good features. I believe it to be far superior to iodine. I append herewith the formula:

Mastiche, 20 gram.

Benzene (water white) 50 gram.

Acetic ester, 20 gts.

Cresole, 1/4 per cent.

(Weigh ingredients carefully, and filter through perfectly dry filter.)

Our list of cases speaks for itself. The variety of accidents and surgical diseases presented here is comprehensive. I, therefore, feel that we have been highly favored with both quantity and quality of surgical material.

Our mortality rate has been astonishingly low: One case, that of cancer of the gall-bladder and liver died from secondary hemorrhage, although there was very little bleeding during the operation, and none was present when the patient left the operating room. The case of appendicostomy died four weeks after operation of basilar meningitis, but the mucous colitis, for which the appendicostomy was performed, had already disappeared, and the patient passed normal stools many days before her death.

The case of colloid ascites (*pseudomyxoma peritonei*) made an excellent surgical recovery, only to die, three weeks after operation, of acute broncho-pneumonia. Our man with depressed fracture of the skull and extensive laceration of the cerebral cortex died one month after his injury, of encephalitis and meningitis. But his operation wound had healed without any infection and he was out of bed, preparing to leave the hospital.

My constant thought in mind has been to give our students the best, up-to-date knowledge in matters surgical and to demonstrate the practical application of the same, so far as within my power lay, in a skillful and dexterous manner. I have aimed at speed in operating, but have carefully eschewed haste; the former is desirable, the latter is to be condemned. I have tried to be conservative wherever possible, but have not hesitated to be bold and fearless where faint heartedness on my part would have spelled failure for the operation.

I have referred in the foregoing to some of the details which have figured in our surgery during the winter of 1919-20 and which make for high class, gilt-edge, refined surgical work. I have endeavored especially to direct attention to the great importance and value—the necessity, indeed, of making a correct diagnosis, or coming as close to it as possible. Several times I have demonstrated the value of arriving at a diagnosis by exclusion, a most commendable method and one which I hope our boys will cultivate. All winter long I have tried to keep operation details in the background, and to bring the questions of diagnosis and non-operative treatment to the front.

I believe it will be interesting to the alumni of Hahnemann to peruse the following list of cases used in the teaching clinics of my colleagues. These cases speak for themselves:

- Clinics Drs. Ashcraft, Bigler, Brooke, Elliott, Leopold, Roman, and Van Lennep.
- October 1919 to May 1920.
- Abscess 23, abdominal wall; arm; breast; chest; liver; neck; prostate; scalp; scrotum; thigh and trunk.
- Adenoma, mammary gland 3.
- Adhesions, peritoneal, postoperative 1.
- Appendicitis 40, acute 12; chronic 28.
- Bullet wounds 5, arm 1; chest wall 3; thigh 1.
- Carbuncle 4.
- Carcinoma 18, bladder 1; cervix 2; gall-bladder 1; hand 1; mammary gland 8; mammary region, recurrence 1; penis 1; rectum 1; stomach 1; supraclavicular, metastatic 1.
- Cellulitis of thigh 1.
- Cervical adenitis 5.
- Cholecystitis 4, acute 1; chronic 3.
- Cholelithiasis 8.
- Cleft palate 2.
- Cystoma-ovari 2.
- Cystoscopy 36, diagnosis 18; radium 8; dilatation of ureter 3; hydronephrosis 3.
- Decompression 1.
- Dislocation 4, elbow 1; hip joint, congenital 2; thumb 1.
- Empyema 7.
- Endometritis 2.
- Epithelioma 5, lip, lower 1; hand 2; penis 1; tongue 1.
- Epulis 1.
- Exploratory 2, of chest 1; of abdomen 1.
- Fibromyoma of uterus 7.
- Fistula in ano 6.
- Fistula, fecal 1.
- Foreign body in foot 1.
- Fracture 23, ankle 1; clavicle 3; femur 3; humerus 4; patella 3; radius 4; tibia and fibula 4; scapula 1.
- Furunculosis 3.
- Ganglion 2.
- Genu Valgum 1.
- Glenards disease 1.
- Goitre 11, simple 5; toxic 6.
- Hare-lip 3, single 1; double 2.
- Hallux valgus 1.
- Hemorrhoids 7.
- Hernia 32, inguinal 24; femoral 5; umbilical 2; postoperative 1.
- Hydrocele 5.
- Infected wounds 11, arm 1; eye lid 1; finger 1; foot 1; hand 4; hip 1; leg 1; shoulder 1.
- Infection, metastatic, 1.
- Keloid of neck 1.
- Laceration 12, cervix 4; pelvic floor 8.
- Lipoma 3, back 2; neck 1.
- Mastitis 1.
- Mastoid disease 2.
- Necrosis of bone 3, carpal bones 1; femur 1; foot 1.
- Neuroma of amputation stump 1.
- Orchitis 2; traumatic 1; tubercular 1.
- Osteomyelitis 8, clavicle 1; femur 3; humerus 1; tibia 3.
- Papilloma recti 1.
- Potts disease 1.
- Prolapsus uteri 4.
- Prostatic hypertrophy 5.
- Pyonephrosis 1.
- Retained secundae 3.
- Retroversion uterus 4.
- Salpingitis 6, suppurative 5; tubercular 1.
- Sarcoma 2, Left inguinal glands, metastatic, 1; testicle 1.
- Sebaceous cyst 1.
- Sinus of neck 1.
- Skin-graft 1.
- Stone in bladder 1.
- Stricture of oesophagus (gastrostomy) 1.
- Stricture of urethra, 13.
- Synovitis, traumatic, knee 1.
- Talipes 3.
- Tendon transplatation 1.
- Tenotomy 1.
- Traumatic amputation 11, fingers 6; foot 2; forearm 1; leg 1; toe 1.
- Tuberculosis 6, caecum 1; hip-joint 1; wrist-joint 1.
- Undescended testicle 1.
- Ulcer of bladder, 1; duodenum 2; stomach 2; acute perforation 1.
- Varicocele 4.
- Varicose veins of neck 1.

THE FEEDING OF NORMAL INFANTS DURING THE SECOND YEAR

BY

CHARLES H. SEYBERT, M.D., PHILADELPHIA

(Read before the Philadelphia Society for Clinical Research, April 27, 1921.)

WE hear much nowadays of the properly modified and prepared cow's milk for use during the first year of infancy, but there is probably no subject about or upon which so much ignorance prevails as the feeding of infants during the second year. The predominant thought seems to be that because an infant can digest whole cow's milk, it is capable of digesting almost anything in the category of food.

Most of the disorders of digestion during this period of life are directly traceable to dietetic errors, prominent among which are: 1. The practice of allowing infants to nibble between meals, in consequence of which the digestive system is kept in a state of constant stimulation with resulting digestive disturbances, besides spoiling the appetite for the more substantial food it should receive at meal times. 2. Irregular hours for or improper intervals between meals. An infant during the second year should be fed at regular and proper intervals and if possible should have its meals alone so that the temptation to give it "tastes" of food provided for older members of the family may be avoided. 3. The giving of too much sweets; this is one of the commonest causes of disturbed nutrition. Most all infants and children are fond of sugar or sweets, in consequence of which it is difficult to keep them in moderation and as a result loss of appetite and digestive troubles are frequently encountered. A little sugar is of itself not harmful, but if the infant be taught from the first to take its food without sweetening it will learn to like it and as it grows older is willing to eat the proper kind.

During the second year the diet of a normal infant should consist of milk, bread, cooked farinaceous foods, fruit juices or stewed fruit, a small amount of animal food, such as beef juice, broths, meat and eggs, with small quantities of green vegetables.

Milk should be the basis of the infant's diet throughout the second year, other articles of food should be given in addition to and should never be substituted for nor take the place

of milk. In order not to destroy the appetite for more solid food it is probably wise to limit the amount of milk to one quart daily.

Weaning from the bottle should be started at the end of the first year; a little difficulty may be experienced in the beginning, for some infants absolutely refuse to take milk from a cup. Patience will, however, overcome this in time.

It is best to begin with the early morning feeding and gradually to replace the bottle until all the feedings are taken from the cup. The cup should be offered and if refused the bottle should not be given until 15 or 20 minutes have elapsed. Until weaning has been completed which is usually before the 15th month it is not advisable to add too much solid food to the diet. As a rule the milk used during the second year requires no modification although the same precautions as to quality should be taken as during the first year. The giving of cream is advocated by some while others find no use for it in the dietary. About the 15th or 16th month the milk at the mid-day meal may be given in the form of junket.

If the baby has not been getting cereals when it is a year old they should be given at once, the simplest and most digestible being barley or oat jelly and farina. After a few months cream of wheat, Ralston, rice and oat meal may be added. They should be given at the beginning of two feedings daily with milk and salt or a teaspoonful of sugar may be added. Cereals which are not cooked or which are not cooked at home should never be given to infants.

At this time broth and beef juice may be added to the diet and should be given at the beginning of another feeding. Chicken, lamb or mutton broth are more preferable and digestible than beef, not more than four ounces should be given at a feeding for fear of destroying the appetite for more nutritious food. Expressed beef juice may also be given, beginning with two teaspoonfuls and not exceeding two ounces before the second year.

In a month or so after broth and beef juice have been started, zwieback, bread crumbs, rice, barley or flour may be added to them. If the teeth be of sufficient number to allow the proper chewing of food, zwieback, toastbread, stale bread or crackers may be given the infant with one or more feedings. Bread and crackers may also be given in milk or in the form of milk toast or cracker milk toast.

Eggs should not be allowed much before the 18th month. They may be served soft-boiled, poached or coddled and given first once weekly, later on, three or four times weekly. Other articles made with egg, such as cup-custard, rice or bread pudding may also be added to the diet.

As the infant nears the second year it may be given meat and green vegetables. The most easily digested meats are white meat of chicken, lamb chop and scraped beef; these may be minced and given a tablespoonful once daily. Two or three tablespoonfuls of a strained green vegetable, such as spinach, squash, peas, string beans, asparagus tips, tender lima beans, stewed celery are allowable; these should be well cooked and strained through a colander. Plain boiled macaroni may be added around the 15th or 16th month, and at the same time a small baked potato with butter, milk or beef juice may be given.

Orange juice, if not already given, should be begun routinely, at the end of the first year; to this may be added prune juice or pulp, baked apple, apple-sauce, fruit jelly or jam and stewed fruit. The orange or prune juice should be given an hour before feeding while the stewed fruit or jelly should be given with one of the meals.

Four feedings a day are usually sufficient during the second year. In such a diet the fruit juices which may be given once or twice daily should not be considered as meals.

The following diet lists may serve as examples for feeding during this period:

12 to 18 months.

7 A. M. 2 ounces of cooked cereal with salt or a teaspoonful of sugar with 6 or 8 ounces of milk.

9 A. M. Juice of half an orange or $\frac{1}{2}$ ounce of prune juice.

11 A. M. 8 ounces of milk with one tablespoonful of oatmeal or barley jelly.

2 P. M. 4 ounces of vegetable or cream soup with a small piece of zwieback or toast; or a meat broth clear or thickened, with a tablespoonful of strained green vegetable. A thin slice of stale bread with butter. The pulp of three or four prunes, small baked apple or one ounce of apple sauce. (If the broth be given alone it should be in the same quantity as the bottle but with the addition of a vegetable it should be given in smaller quantities.)

18 months to 2 years.

7 A. M. 4 ounces of cooked cereal. 1 egg, soft boiled, poached or coddled with stale bread, toast or zwieback and butter. 6 to 8 ounces of milk.

9 A. M. Juice of one orange or one ounce prune juice.

11 A. M. 8 ounces milk or 6 ounces chicken, mutton or beef broth thickened.

2 P. M. 4 to 6 ounces of a strained vegetable or cream soup. One tablespoonful of minced chicken or scraped beef or the heart of 1 lamb chop. 2 or 3 tablespoonsful strained green vegetable or 2 tablespoonsful of a starchy vegetable as macaroni or mashed potatoes, a medium sized baked potato with butter or beef juice. Stale bread or toast with butter. 6 ounces milk or junket, cup-custard, corn-starch bread pudding, baked apple, plain rice pudding.

6 P. M. 2 ounces of some cooked cereal with 1 or 2 tablespoonful of cereal jelly and 8 ounces of milk.

6 P. M. Four ounces of some cooked cereal; with milk or milk toast; 6 ounces of milk with bread or crackers. Fruit jelly or jam or stewed fruit.

These suggestions may seem very conservative in view of the fact that many men feed much more liberally, some even go so far as to give vegetables as early as six months, but when we stop to consider that the acute diarrheas so common during the summer months, are met with quite frequently during the second year of life, and that the majority of infants are overfed rather than underfed, it would seem the wiser plan to lean to conservatism in our choice of food rather than to the more liberal diet with its possible attendant disturbances. It is true cases are seen who do not make progress upon a simple diet and who must be fed more liberally, but on the other hand many more are met with, suffering from the results of overfeeding, who must be fed in a more simple manner, for after all feeding during the second year simply resolves itself into one of individuality.

1421 Spruce Street, Philadelphia.

**SYPHILIS AS A FACTOR IN MASTOIDITIS PRODUCING SYMPTOMS
SUGGESTIVE OF SINUS THROMBOSIS. REPORT OF A SECOND CASE**

BY

WILLIAM G. SCHEMELEY, JR., M.D., PHILADELPHIA, PA.

(Read before the New Jersey State Homœopathic Medical Society, Asbury Park, N. J., May 27, 1921.)

In a previous paper read at the meeting of the Philadelphia Laryngological Society, January 4th, 1921, the first of these interesting cases was reported. The temperature chart of the case then reported and that of the case about to be presented are now before you for comparison. The results in both cases show clearly the beneficial effects obtained from antiluetic treatment.

Before taking up the case itself it might be well to consider whether or not syphilis, especially of the congenital type, attacks the temporal bone with sufficient frequency to make a study of it valuable to the general practitioner who is already burdened with many and varied problems of diagnosis.

In their studies of the temporal bones of syphilitic foetuses Asai¹ and Gruenberg² both observed that spirochetes were distributed throughout the temporal bone, but especially were they found along the blood vessels and nerves. Mayer,³ after examining a series of cases in which the ages ranged from ten minutes to seventeen months, concludes that in hereditary lues of children there occurs a specific inflammation of the meninges and that with the meningitis there occurs a specific interstitial inflammation of the acusticus.

Other investigators⁴ agree, in part, although there is some diversity of opinion over minor factors.

One may conclude from the findings of those who have made pathologic studies of syphilitic temporal bones that lues is especially prone to attack the temporal bone, together with the structures therein contained, with sufficient frequency to place aural syphilis in a class of disease whose importance warrants the attention of a general practitioner.

Patient, Mildred M., age 4 years, was first examined at the request of Dr. Wesley J. Barrett, of Camden, N. J., in December, 1917.

HISTORY.—From the time the child was five months old she had been subject to sudden attacks of high fever. Occasionally the child vomits during this febrile stage. The disappearance of the fever is followed by a period of more or less indefinite symptoms. For the past three days the patient has complained of pain in the left ear. Twenty-four hours before the first visit the left ear began to discharge. According to Dr. Barrett, the temperature ranged between 101 degrees and 102 degrees F.

EXAMINATION.—Child of normal size and weight for her age; appears well nourished.

Nose. Externally the nose is small and of more or less the "saddle back" type; considerable thick mucous secretion. No further details discernible.

Throat. Tonsils large, crypts open; large sized adenoids, palpated by finger.

OTOSCOPIC EXAMINATION.—A. D.: Membrane intact, brilliant, translucent, long process of anvil visible, hammer handle in normal position. Normal mobility with Siegel. Because of the age of the child, direct inspection of the right tympanic membrane during attempts at Politzer inflation was unsuccessful.

A. S.: External canal contains considerable pus, obstructing view of tympanic membrane. After cleansing with water and drying canal with cotton, a fair sized perforation, stellate in outline, was visible in the posterior inferior quadrant. The discharge was profuse, slightly offensive, and pulsating.

TEETH.—The teeth are in poor condition and it was questionable whether they were of the Hutchinson or rachitic type.

A diagnosis of acute otitis media of the left ear was made at this time, and the removal of the tonsils and adenoids was advised as soon as the present condition of the patient improved.

The child improved rather slowly until in January, 1918, when her condition became much worse. She developed a bilateral suppurative otitis media, together with an acute nephritis. The left ear drained large quantities of thick greenish pus, and there was a slight mastoid tenderness; however, because of the severity of the nephritis, operative interference was postponed. The child had a very slow recovery but by March, 1918, the kidney condition improved to such a degree that operation was decided upon as the lesser of the two evils, since the child now presented a double mastoiditis. Accordingly, the child was operated on March 30th, 1918. A double mastoid operation was performed and the tonsils and adenoids were removed at the same time. At the operation the bony wall of both lateral sinuses was observed to be eroded and granulations were present. The child made a rapid and uneventful recovery and was discharged the second week in May, 1918, at which time the ears were free from secretion and the perforations in both tympanic membranes had healed.

In June, 1918, the child developed a high temperature ranging between 96 degrees to 105 degrees F. The temperature, preceded by a chill, was without any demonstrable cause and the patient was free from symptoms except for nocturnal headache.

Widal test was repeatedly made and found to be negative; so were the tests made for malarial organisms. From the peculiar "church-spire"-like temperature, together with the fact that both lateral sinuses were pathologic in appearance at the time of operation, the various possible affections of the

lateral sinus were thought of; so far as could be determined, however, these were negative. No particular remedy seemed indicated except that mercury appeared to fit the nightly aggravation, the anemia, and the headache. Accordingly, mercurius bin-iodide (1/100 grain every two hours) was prescribed. Almost immediately the temperature began to subside and quickly reached normal and remained so. The patient began to gain in weight, and at last report in 1918 was enjoying better health than at any previous time. At that time the writer was unable to give a satisfactory diagnosis.

Having met with several other atypical cases in which an unrecognized lues was the underlying cause, and having had a somewhat similar case more recently, the chart of which is here, proved to be due to congenital syphilis. This, together with the appearance of the teeth, and the fact that the case responded quickly to mercury, prompts the writer to place this as the second in the group of cases where "syphilis proved to be the factor in mastoiditis, producing symptoms suggestive of sinus thrombosis."

This opportunity is taken of thanking the Society for the privilege of presenting the paper.

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X-RAY THERAPEUTICS IN PULMONARY TUBERCULOSIS

BY

WALTER C. BARKER, M.D.

(Read before the Clinico-Pathologic Society of Philadelphia, Feb. 3, 1921.)

BECAUSE tuberculosis may affect any tissue of the body, the methods of treatment are numerous, and there are cases in which the disease is arrested, while under treatment by any

of these methods. There is no specific way to treat tuberculosis, and it is not the object of this paper to make such a claim for the Roentgen ray.

A few years ago, Doctor Gibson of Denver, Colorado, reported a large number of cases of pulmonary tuberculosis, which were treated by the Roentgen ray with good results. He had no recognized clinical proof for his claim and the climate of Colorado, having a reputation for arresting the progress of this disease, greatly discounted the credit given to the Roentgen ray.

Shortly after Doctor Gibson's visit to Philadelphia, twenty cases of pulmonary tuberculosis were referred for treatment. Of this number, three were too far advanced to be treated, and seven stopped their treatments in less than four months. The ten cases which continued their treatment for one year or more, are all living and well.

To describe the changes which occur in tuberculous areas of the lung treated by the Roentgen ray irradiations, it will be necessary to briefly state the changes which occur in the shadow of the lung, cast by the Roentgen ray, when it is affected by tuberculosis. The earliest pathological shadow is that due to the infiltration which occurs around an area of tuberculous infection. This shadow appears as a faint increase in density which blends away into the normal lung shadow. If the infection continues active, caseous material will be thrown into the air spaces and this will show as irregular dense areas scattered through the area of infiltration. The edges of these dense irregular shadows are blurred. If the disease becomes arrested at this stage, the shadow of infiltration will disappear together with some of the mottling, while other areas will become denser with smooth edges and be sharply contrasted against the normal lung shadow.

If the diseased condition extends, there will be an increase in the mottling appearance through the lung shadow, which may even include the whole apex of the lung, and be scattered along the branches of the superior trunk. In some of these areas of consolidation, the lung tissue may soften and break down, forming cavities. If the disease is arrested in this stage, many of the areas of mottling will disappear entirely, as they are not due to caseous material but to a serofibrinous exudate. The shadows cast by the caseous material will become smooth in outline and show clearly against the normal

lung shadow. Some of these areas may contain calcareous deposits. There will also be numerous bands of fibrous tissue throughout the area which was involved. The effects of the Roentgen ray therapy will not only show a physical return to health but must also show changes in the shadow of the Roentgenogram, from those of the active ones, to shadows of healed lesions.

The effects of the rays which are of value in the therapy of pulmonary tuberculosis, must be secondary ones; because the direct action of the ray in large doses is to absorb the fibrous tissue. This may be seen in the treatment of fibrous adhesions following inflammatory processes which occur in the pleura, peritoneum, on the synovial surfaces after various forms of arthritis, and even in the pericardium. Because of this fact, only small doses of the ray are used, so as not to absorb the fibrous tissue, the presence of which seems to be important in arresting the progress of the disease. The proper technic is to use high penetrating rays, backing up eight to ten inches between points, filtered through three millimeters of aluminum, and at a target distance of sixteen inches. The dose is one-fourth to one-half a skin unit, repeated every two to four weeks, depending upon the reaction.

X-rays used in small doses will increase the number of white cells, while large doses will greatly diminish their number. It may be that the increase in the number of the white cells has some influence in arresting the tuberculous process, but it is more probable that this action is due to some other biological effect which has not been observed. Of the ten patients treated with good results, two were males and five had the tubercle bacilli in the sputum.

The first patient treated was in 1913. This was a female, 35 years old, occupied in mending rugs and carpets, in a cleaning establishment. The tubercle bacilli were present in the sputum and there was loss of weight, cough, night sweats, cessation of the menstrual flow and evening rise of temperature. The Roentgen examination showed mottling throughout the apex of the left lung, with thickening of the pleura at the base and no free fluid. The patient rested from work for three months and continued X-ray treatments for one year. She is now well and has no symptoms of pulmonary tuberculosis.

The second case referred by Dr. M. J. Nevinger, was a

female treated in 1917, 23 years of age and doing clerical work. The tubercle bacilli were present in the sputum. The Roentgen examination showed mottling in both apices. This patient rested for five months in the Poconos, coming to Philadelphia once a month for treatment. At the end of a year all symptoms had disappeared and the patient is well and now living in Maryland.

The third case was referred by Doctor Raymond Leopold. This was a female, 24 years old, and occupied as a school teacher. She had hemorrhages from the lungs and tubercle bacilli in the sputum. This patient continued teaching while taking treatments, and at the end of one year made a symptomatic recovery. Four other patients were housewives and are well at this time.

The first male patient was 51 years old and treated in 1916. At the time of his break-down, he was sent to a sanitarium where he remained for two months. His family being in need of financial aid, he left the sanitarium before he was well. The tubercle bacilli were found in the sputum. The Roentgen examination showed mottling at the apices of both lungs. Re-examination of the chest January 25, 1921, shows a few thick dense areas along the upper trunk and some fibrous tissue through the area which was active in 1916.

The other male patient came for treatment in August, 1918. He was 44 years old and his occupation was of the kind that kept him exposed to all kinds of weather. The Roentgen examination showed mottling at the apex of the left lung. The tubercle bacilli were not found. At the end of eighteen months this patient had a symptomatic recovery, and is still enjoying good health.

In March, 1918, Mrs. L., 41 years old, weighing 138 pounds, complained of frequency of urination with pain just before voiding. The urine was said to be cloudy with a thick sediment.

This patient had always been well, with the exception of a large polypus attached to the uterine cervix and reaching down to the vulva. This polypus was removed surgically.

Urinalysis of a fresh catheterized specimen showed it to be faintly acid, specific gravity 1028, albumen present, no sugar and the cloudiness due to pus. Repeated examinations were made of the urine for tubercle bacilli but they were not found, and there were no bacteria of any kind present even on

an agar or blood slant. A direct X-ray examination of both kidneys, ureters and the urinary bladder was made, and there was no shadow of stone.

Because of the absence of stone and bacteria, tenderness in the region of the left kidney and along the course of the left ureter, and a complete temporary relief of the bladder symptom after irrigation, a diagnosis of tuberculosis of the left kidney was made.

The patient refused operation at this time and left the city to go to the shore. On returning in July, she still had the pus in the urine and the pain in the left lumbar region, together with loss of weight and weakness.

A Roentgenogram of the chest was made July 18, 1918, and showed the shadow of the right root considerably thickened with an increase in the density of the lung shadow along the superior trunk and its three branches; also a fine mottling along these branches and throughout the apex of the right lung. On the left side the root was somewhat denser than normal. There were five small dense areas along the second interspace branch; three of which were old lesions containing calcareous deposits. The other two are shadows of caseous material. There is mottling along the three branches of the superior trunk and scattered throughout the apex of the left lung.

When this lung involvement was discovered, operation for removal of the kidney was no longer considered. Forced diet and open air treatment were recommended. The patient, however, continued to lose weight and finally became hectic, with afternoon chilliness and evening rise of temperature, varying from 98 to 99 in the morning, and from 99 to 101 in the evening. There were cough, expectoration and night sweats. The sputum was examined and tubercle bacilli found. On January 14, 1919, the patient's weight was 90 pounds. At this time a preliminary X-ray examination was made and showed an extension of the disease as denoted by an increase in the mottling of the lung shadow, especially in the right apex. At this time X-ray treatments were decided upon.

The dose was one-half a skin unit given every three weeks, alternately through the back and front of the chest. These treatments were continued for eight months; at the end of which time the patient was feeling slightly better, but had gained only half a pound in weight. Treatments were now

given at four week intervals and the improvement was very rapid during the next four months. The kidney pain stopped entirely and the urine cleared but the frequency of passage remained. The menses stopped in April, 1918 and returned during this period. On January 14, 1920, the patient weighed 110 pounds and had very slight cough. The X-ray examination at this time, showed a marked improvement. Many of the areas of consolidation had disappeared and the fibrous tissue was very prominent.

During the year 1920 treatments were given at three month intervals. On January 14, 1921, the patient was free from all symptoms referred to the lungs and kidneys, and weighed 132 pounds. The X-ray examination showed the areas of mottling to be replaced largely by fibrous tissue; the few dense areas remaining were those of consolidation which were walled off by fibrous tissue as shown by their outlines being smooth and sharply contrasted against the normal lung shadow.

It does not seem credible that the ten cases reported were all of the ones which would have had a spontaneous recovery; or that of the many hundred cases reported by Doctor Gibson, all would have recovered without the rays. It must not be overlooked that in many patients the course of tuberculosis is intermittent over a period of years; however, the rays have also proven of value in the treatment of other tubercular lesions, such as cervical and bronchial adenitis, and in some cases of tubercular peritonitis. Tubercular bone infections heal more quickly and the patients suffer less pain when treated by the Roentgen ray. Of course, when pus is present, it is necessary that surgical means be used.

From the study of these cases, it seems that the X-ray is of value in the treatment of pulmonary tuberculosis, but the general care as to diet, rest and habits must also be supervised.

1823 Chestnut Street.

VALUE OF WASSERMANN TEST IN MALARIA.—In 84 cases of undoubted malaria examined by Iyengar a positive Wassermann was obtained in but 7 instances. The author concluded that the malaria was not the cause of the positive result, and that quinine does not influence the Wassermann.—*Indian Journal of Medical Research*, June, 1921.

REPORT OF SURGICAL CLINIC

(AT THE KEYSTONE PRIVATE HOSPITAL ON NATIONAL
HOMOEOPATHIC CLINIC DAY, OCTOBER 19, 1920)

BY

G. W. HARTMAN, M.D., HARRISBURG, PA.

WITH your permission I will review briefly the history of the first case operated upon. The patient was an Italian woman, 52 years of age; married, and the mother of five children. She had had the usual diseases of childhood, otherwise her past history was negative. Her family history was indefinite and negative so far as we were able to learn.

The history of her present illness commenced about two years ago, when she began to have symptoms of indigestion after eating, slight pain and discomfort with belching of gas but never any nausea or vomiting. These symptoms became slightly worse until about four months ago, when she began to have some difficulty in swallowing, especially solid food. Up to this time there had been no vomiting, although patient had begun to lose considerably in weight. A few weeks later patient was unable to take any solid food and later even liquids could not be taken, and for the past two or three weeks before admission to the hospital, practically no food could be retained, regurgitation occurring without special effort a few minutes after ingestion. During this time the patient suffered but little pain, and she attributed her loss of weight and gastric disturbances to nervousness brought on by sorrow and family troubles.

The physical examination revealed the heart and lungs negative, the nervous system negative. Inspection and palpation of the abdomen revealed a hard movable mass about the size of a hen's egg, just below the left costal margin; the mass was not tender to palpation. The blood pressure was 110 systolic, 75 diastolic, the blood count revealed 9800 white cells, reaction was negative. The urinalysis showed slight acetoneuria, but otherwise was negative. The stools were negative to occult blood. Dr. Mulligan made a screen and plate X-ray examination with the following report:

Esophagus—screen and plate examination.

There is seen to be a constriction of the esophagus at

the cardiac orifice with a moderate degree of dilatation above the constricted area. The esophageal outline around the constricted area is regular in outline and ending at the lower end in a conical projection. Only a small amount of the barium-buttermilk meal passed the constricted area at the end of an hour. There was not sufficient opaque material in the stomach at this time to outline this organ so that examination could not be made.

The Roentgen findings would suggest cardiospasm rather than malignancy, at least, so far as the esophagus is concerned.

P. B. MULLIGAN, M.D.

Efforts to overcome the esophageal constriction by medication and the passing of bougies failed. A clinical diagnosis of carcinoma of the cardiac end of the stomach was made and a gastrostomy decided upon as the only means of palliating the patient's symptoms.

When patient was taken to operating room on October 19th, her temperature was 97.3; pulse 76, and respirations 20. Operation revealed a large nodular carcinoma involving the cardiac end of the stomach with marked infiltration into the upper part of the greater and lesser curvatures and marked involvement of the surrounding lymph nodes. A gastrostomy was performed and patient returned to her room in good condition. Temperature 97 axillary; pulse 114; respirations 20. Patient reacted from her anaesthetic without any nausea and enteroclysis of 5 per cent sol. of sodium bicarbonate was started and continued for 24 hours. Nutritive enemas were then given twice daily, alternated with 5 per cent. glucose enteroclysis. Patient was allowed small sips of water by mouth on the next day following operation, and on the fifth day ice cream and broth were given by mouth in small amounts without nausea. On the third day after operation four ounce quantities of peptonized milk, broth or water were given every four hours regularly through the gastrostomy tube into the stomach, and patient began to gain in strength. About this time the patient began to develop a deep tearing non-productive cough.

At the end of eight days the gastrostomy tube was removed and replaced by a No. 24 F. soft rubber catheter, this was removed daily for cleansing and even when removed there was practically no regurgitation of food as the sinus had formed a valve which almost perfectly controlled the opening

into the stomach. The patient was out of bed at the end of three weeks and apparently was more comfortable than before operation, being able at this time to take soft diet by mouth with little distress from regurgitation. Patient remained in the hospital until November 28th—43 days after operation.

Patient was visited daily at her home by a city nurse who was instructed as to the care and feeding of patient through the gastrostomy tube. On December 15th, patient developed a severe racking cough with marked dyspnoea. This condition gradually became worse, and her strength rapidly failed until she died on December 22nd. I might say in conclusion that patient never suffered markedly from regurgitation of food or vomiting from the time she was operated until her death.

The second case was Mrs. D., 36 years of age, who was operated for an old perineal laceration of fourteen years' standing and a simple goitre. In this case a perineorrhaphy was done followed by a bilateral thyroidectomy. This patient reacted from her anaesthetic following operation rather stormily, becoming cyanotic and showing some symptoms of shock, making it necessary to administer oxygen and cardiac stimulants during the first four hours following her return from the operating room, otherwise her convalescence was uneventful, both the goitre incision and the perineal repair healing by first intention. She was discharged from the hospital on the eleventh day following operation, and since that time has shown a marked improvement in the nervous symptoms, attacks of cardiac palpitation, and the symptoms that led us to believe she was suffering from the early symptoms of exophthalmic goitre.

The third patient, Mrs. D. B., was operated for a complete perineal laceration of three years' standing. Previous to operation the patient was unable to have complete control of her bowels, and especially when she had taken even a small laxative the bowels would move involuntarily. Following operation patient's convalescence was uneventful, the perineal repair healing by first intention. She was discharged from the hospital on the 17th day following operation. Since that time the patient has reported at our office for examination twice, and our examinations have revealed a satisfactory repair with returned control of the anal sphincters. Dr. H. H. Rhodes, her family physician, who referred the case to us

for operation, has kept in touch with her and assures us her condition is greatly improved.

The fourth case, Mrs. H., was operated for old bilateral cervical and perineal laceration of four years' standing. Patient's convalescence following operation was uneventful, both the cervical and perineal repairs healing by first intention. Patient was discharged from the hospital on the 11th day following operation and several examinations following her convalescence reveal excellent results in both cervix and perineum.

The fifth case operated was James M., age 7 years, operated for tonsils and adenoids. The patient's convalescence following operation was uneventful. He was discharged from the hospital the following day.

INFLUENZA AND EPILEPSY.—From a study of pertinent literature and of clinical material afforded by the epidemic of influenza of 1918-1919, Menninger summarizes the interrelations of influenza and epilepsy as follows:

1. The effect of influenza upon idiopathic epilepsy is not uniform.
2. Beneficial influence is occasionally observed; seizures are perhaps usually absent during the febrile state and in some instances occur with decreased frequency after the acute infection. There are no cases on record in which influenza has induced an entire cessation of epileptic attacks once instituted.
3. Deleterious influence is more frequently observed. This is manifested in various ways.
4. Seizures may occur with increased frequency following influenza, both as compared with short periods and long periods of time prior to the acute infection.
5. The character or type of the seizures may change subsequent to the influenza, in addition to or independent of the increase in frequency.
6. Epilepsies whose manifestations have long been latent may be incited to renewed activity by the attack of influenza.
7. Psychoses may be precipitated in epileptics by influenza, as in non-epileptics.
8. Epileptiform syndromes which resemble typical idiopathic epilepsy, except that recovery usually occurs shortly, are occasionally evoked by influenza. Probably we should regard these as recoverable or "reversible" types of idiopathic epilepsy, the product of influenza and a (possibly) susceptible brain. Possibly they are manifestations of multiple miliary (encephalitic) hemorrhages.
9. But the majority of epileptic patients who had influenza did not exhibit any alteration in their disease.
10. The effect of "epilepsy on influenza" was observed to be a lowered resistance, and hence increased morbidity and mortality rates (as compared with normal persons).
11. Influenza thus appears to exhibit, in the case of epilepsy, the properties previously demonstrated to be operative in the case of the psychoses associated with influenza: creation, precipitation, aggravation and amelioration.—*American Journal of the Medical Sciences*, June 1921.

EDITORIAL

THE PHYSICIAN'S FEES AND FALLING PRICES (?)

THE medical profession has always been underpaid. As Mary Roberts Rinehart remarked through the medium of a character in one of her novels, "A man would pay cheerfully to a lawyer a bill of \$10,000.00 for keeping him out of jail for six months, and growl like thunder at a doctor's bill for \$100.00 for saving his life, and perhaps keeping him out of hell forever." There seems somehow to be a difference which has generally been commented upon. So relatively meagre have been the returns for the expense and time required for a real medical education, together with the ability to acquire it, that young men are being driven to other occupations or professions, and we are facing a dearth of doctors.

A few years ago, with the beginning of the war, prices began to mount, in some cases as much as forty fold. It was only natural, therefore, that the physician, the most underpaid of all workers, should increase his prices. So far as we know, however, these prices were never increased to an inordinate degree; they were simply brought up in most instances to the point where they should have been in normal times.

Now the question is raised, in view of what has been called "falling prices," should the physician go back to the pre-war schedule? This is a matter for most serious consideration. In the first place we may well ask, are the falling prices of a practical kind so far as the physician is concerned. To our observation there is a certain amount of myth in the falling prices. When one is invited to pay five cents for one tomato during the month of July, when an entire basket of that commodity could have been purchased for from thirty to fifty cents a few years ago, we may well ponder. He may also think seriously of the question of rentals, which must influence not only the cost of living, but the cost of conducting a profession. For example, taking an instance in the home town of the Hahnemannian, in an outlying section of the city there is a two-story property which rented for \$700.00 a year, on a long lease. At the expiration of this lease the lessor is invited

to pay \$600.00 per month; the business will not stand it, therefore, he goes out and accepts a situation. The dealer who charged five cents for one tomato does business also, in an outlying locality, and must pay \$400.00 per month for store space of 20 by 30 feet, or \$8.00 per square foot. When one recalls that only a few years ago the best equipped office building of the country charged \$3.50 per square foot, one has food for thought as to why prices are what they are. The overhead is tremendous.

The special expenses of conducting a medical practice have not fallen by any manner of means to the pre-war basis. Here and there we find a small concession; even though tires, gasoline and automobiles have come down, garage rentals have gone up, and taking it all in all the physician finds his automobile costing him over twice what it did in 1914. Indeed, he might very well, after investigating what it costs him to make a visit, wonder whether it might not be a wise plan to hire a taxicab in the busy season; and walk or take train or trolley during the dull period of the year.

As to the physicians' pharmacy, we all know the difficulties surrounding the alcohol question; not only is the charge for the same raised from \$2.40 to \$8.00 per gallon, but the annoyance and time required in getting one's supply of alcohol, and the care demanded for its protection and conservation make the increased expense much greater than it otherwise would be.

With respect to medicines themselves, the more commonly used drugs cost from 60 to 100 per cent, greater than the old standards, while numerous others less commonly used may go, in extreme instances, as high as 6 or 7 prices.

The least increase has probably been in surgical supplies, which show no sign of receding, and which in view of increased rentals appear to be thoroughly justified. Here the cost to the doctor is but 25 to 40 per cent. over standards.

In order that the medical man shall settle this matter for himself, it is his duty to determine precisely what it costs him to conduct his business, reducing his affairs to a budget system; this is what every business man is doing. He must then adjust his fees accordingly; the matter of charging individual patients all the traffic will bear is bad business policy, and while it may result in a temporary advantage, will surely react disastrously in the end.

In a consideration of the cost of conducting business, one must not forget the percentage of bad accounts, always an important item, and the amount of business conducted without remuneration of any kind whatever. Under the latter heading come the responsibilities placed upon us by the prohibition amendment, the narcotic law, various local regulations respecting the health of a community, the making of professional calls for sweet charity's sake, and attendance upon hospitals and dispensaries. In a way hospital and dispensary work, as well as attendance upon the poor, give to the physician an advantage by reason of which his experience, and, therefore, his skill, are greatly increased. In other words, he has added to his capital. This means, necessarily, that having a greater capital invested a greater return should be received by him, which is a most excellent reason for carrying his practice on the basis of "a living wage."

There was a time when it was possible to see a remarkably large number of patients daily and "get away with it." The fees at that time were ridiculously small, the overhead and carrying charges for professional work were low, and the physician at the end of the year found a most excellent balance on the right side of his ledger. Today medical science has advanced to such an extent that no longer can a physician make a living on quantity work, but must depend upon quality production for a living.

Three visits outside in an hour, and at the most five per hour in the office, represent the limit of good work. With the added disadvantage of greatly increased overhead and carrying expenses, to say nothing of what might be characterized as the labor overturn, an item of which very few physicians have taken cognizance, and which is neglected by probably 95 per cent. of us.

The physician does not object to long hours. Labor is clamoring for a forty hour week, and threatens to make it thirty or less. If there is a physician who gets off with less than fifty hours a week we shall be pleased to make his acquaintance. So far as I know the vast majority of doctors rather enjoy their life of activity, even though they may growl about it. Nevertheless, we must seriously consider the question of all work and no play. One has but to scan the obituary columns to discover the fact that the one great cause of death in the medical profession is cardiovascular disease and,

of course, we all know the cause of cardiovascular disease is physical and mental strain. It is a principle of political economy that extra hazardous occupations must receive pay in accordance with the hazard. The physician's life is not generally regarded as hazardous, but it is a life that carries with it a lowered expectancy as compared with more favored professions.

The physician cannot afford to do altogether as he would like to do with regard to economies and methods of living. Socially he must keep up with the best in the community, for his patients and neighbors hold him as among the elect; he must live up to his reputation. His children must associate with the children of the elect; that means more money. He must take an interest in affairs to a moderate extent, this costs him time and distraction, and these are money.

Well, we might go on indefinitely, every reader of this journal knows the situation; we are no wiser than they, but we pen these remarks in order that they may think this problem over seriously. We wish to impress upon them our belief that the doctor, notwithstanding the increased pay, is not paid any more than he should be. It, therefore, seems that his fees should continue. It also seems to us that the traditions of the medical profession for charity should be maintained. There is no reason now, as ever, why concessions should not be made to God's poor. There is no reason, on the other hand, why reduced fees should be accorded to a silly woman who pays \$50.00 for a special method of dressing her hair at the hands of a fashionable beauty parlor, while she neglects a physician's bill of \$25.00; nor why a man should pay \$500.00 for a prize bull dog one week, and object to a nominal bill for medical service to his wife the following week.

After all, the matter comes down to the same principles that have always existed; local conditions must be considered, the personal equation is an important factor; the health and well-being of the community individually and collectively depend upon the ability and skill of its physicians. Try as we will we cannot get away from these fundamental propositions. The physician must have time to do his work properly; he must have time to improve his medical knowledge by reading and occasional trips to medical centers for post-graduate instructions, and he must have time for rest and recreation.

DEPARTMENT OF ENDOCRINOLOGY

It gives us great pleasure to announce to our readers that hereafter we shall have in our gleanings pages a Department of Endocrinology. This will be under the care of Dr. Augustus Korndoerfer, Jr., whose knowledge and practical experience concerning this science are second to none. Dr. Korndoerfer has devoted a great deal of attention to this matter for a number of years past, and while an enthusiast he has not permitted his enthusiasm to carry his ideas to fadism. THE HAHNEMANNIAN and its readers are to be congratulated. The first issue of the new department will be in either the September or October number, after which it will appear regularly.

DIAGNOSTIC PITFALLS. THE LATE EFFECTS OF GASSING VS. TUBERCULOSIS.—

Many of us have been forced in practice to solve the diagnostic problem, Is our patient suffering from the late effects of gas, or is he tubercular? John B. Hawes, 2nd, of Boston, in discussing this question, as the result of quite considerable experience, admits, as must we all, that the problem is a difficult one, but he feels sure that thoroughness, patience, attention to the striking points of difference between the symptoms-complex of late gas poisoning as outlined below and tuberculosis, as well as sympathy and encouragement to the patient, will in the long run, bring about good results. The symptom-complex may be briefly stated as follows: 1. Cough; 2. Sputum; 3. Hemorrhage; 4. Pain, or a sense of constriction in the chest; 5. Dullness, usually at the bases, and due to a thickened pleura; 6. Diminished voice and breath sounds due to the same cause, and 7. Rales of every variety and description.

Among the constitutional symptoms are: 1. Loss of strength and ease of fatigue; 2. Shortness of breath; 3. Signs and symptoms of a marked psychoneurosis, such as a tendency to dilate upon and exaggerate symptoms in every way, along with increased reflexes.

The points to be remembered are the following:—1. Do not take it for granted that a given process is tuberculosis, even with a suggestive x-ray. 2. Do not do the reverse. 3. A general appearance of robust health, with marked symptoms, is against tuberculosis. 4. Bear in mind that the lung complications resulting from gas are usually basal and not apical processes. 5. And that the usual signs found are those of a thickened pleura and often a localized bronchitis. 6. And further, that following gas, there is apt to be a marked increase in nervous symptoms of every kind. 7. Do not take it for granted that these men who have been gassed are not sick and do not need treatment, even if you decide that they do not have tuberculosis or, indeed not much wrong with their lungs in any way. 8. Treat the man who has been gassed and not his lungs.—*Boston Medical & Surgical Journal*, July 7, 1921.

GLEANINGS

MEDICINE.

Conducted by CLARENCE BAETLETT, M.D.

SIGNIFICANCE OF ALBUMIN AND CASTS IN THE URINE.—Dublin has made some investigations covering this point using for his material over 5,000 persons who had been denied insurance by reason of the discovery of small quantities of albumin in the urine with or without casts. All of the subjects were denied insurance during the period between 1905 and 1915. Thus an opportunity was afforded for an extended study of the life histories of these patients. In those who had shown the slightest possible trace of albumin, the mortality was but 14% above the normal for the period covered. In the case of those with larger traces and with casts, the mortality was 83% in excess of standards. It would appear therefore that the persistence of albumin in quantities in excess of the slightest trace is of serious omen. The investigation also shows that the seriousness of the presence of albumin is reflected also in the high death rate of various diseases; e. g., in tuberculosis, twice the usual; in cancer, twice; diabetes, three times. The amount of the albuminuria is of greater importance than the age of the patient. The author concludes that the majority of the patients at the time of the insurance examination were suffering from Bright's disease. The presence of casts adds materially to the gravity of the situation. Granular cast are more serious than are the hyaline. At the older ages, the presence of casts together with albumin, is indicative of a most serious outlook. At the younger ages, the presence of a trace of albumin with casts is, in many instances, suggestive of tuberculosis.—*American Journal of Hygiene*, May, 1921.

RELATIONSHIP OF PULMONARY TUBERCULOSIS TO APOICAL PLEURITIS.—Van Zwalunwenburg and Grabfield have observed that the pleural shadows over the apices pass by insensible gradations into those of frank pulmonary tuberculosis, and suggests most emphatically, the originally tubercular nature of the apical pleurisy, which almost invariably precedes the tubercular changes. There is a remarkable predisposition to spread to the apex of the opposite side and to the underlying lung.—*American Journal of Tuberculosis*, June, 1921.

TUBERCULOUS EMPYEMA.—Kalb's experience with 10 cases seems to show that thoracotomy is not a desirable treatment, as both cases treated thus died. The remaining cases were treated by the method first suggested by Murphy. In five instances the empyema supervened upon the treatment of a tuberculosis by artificial pneumothorax. All of the purulent material that is possible is removed by aspiration or siphonage or both combined, using a large needle. Then a 2 per cent. solution of liquor formaldehyd in glycerin is injected, the amount varying according to the amount of fluid withdrawn.—*American Review of Tuberculosis*, June, 1921.

IDIOTCY OF PARATHYROID ORIGIN.—According to Comby, there appears to be good reason for accepting the conclusion that an acquired idiocy of parathyroid origin is not uncommon. Clark, reporting 3 cases in which

apathy, tremor, and convulsions recalled to his mind the effects of parathyroidectomy in animals. He therefore treated them with parathyroid extract, and obtained most excellent results.—*Archives de Medecine des Enfants*, April, 1921.

QUINIDINE IN THE TREATMENT OF ARRHYTHMIA.—Quinidine threatens to vie with digitalis as an efficient remedy in auricular fibrillation. Chenisse reviewing the literature on this subject concludes that the remedy can be counted upon to arrest the cardiac irregularity; but sooner or later, the trouble returns and is no longer subject to amelioration.—*Presse Medicale*, May 28, 1921.

JACKSONIAN EPILEPSY FROM ASCARIDES.—It has always been the contention that Jacksonian seizures must be accepted as evidence of focal organic brain disease. A case reported by Saroni appears to refute this idea. The patient was 4 years of age and had attacks of convulsion of the left arm recurring over a period of 10 days. Other than the seizures, there were no symptoms. Ascarides were discovered in the stools. Accordingly a vernifuge was prescribed, and complete recovery ensued. The author suggests that some infection or toxic process in the brain had produced a point of least resistance, thus permitting the morbid agent acting upon that particular focus and thus producing the peculiar type of convulsion.—*Pediatrics*, May, 1921.

MORTALITY OF HYPERNEPHROMA.—Michaelsson's analysis of 30 operative cases of hypernephroma does not give us much encouragement as to results. Seven survived from 4 to 15 years. Among the survivors was an old man now aged 74 years. The youngest patient was 34 years of age at the time of operation. It would seem that even microscopic evidence of non-malignancy is not reliable evidence of non-recurrence of the growth.—*Archiv fur klinische Chirurgie*, March 21, 1921.

POSTOPERATIVE THROMBOSIS AND PULMONARY EMBOLISM.—Rupp (*Archiv fur klinische Chirurgie*) found embolism and infarcts in the lungs in 5 per cent. of the 12,971 cadavers examined in 18 years. The 22,689 operative cases during 18 years were followed by fatal thrombo-embolism in 0.26 per cent., while 1.1 per cent., succumbed to this cause of the patients with internal diseases. Changes in the force of speed of the blood stream and injury of the vessel walls are factors common to all cases. The data impose the necessity for thorough preparation of the patient in respect to heart, lungs and kidneys before operation, and scrupulous care to avoid chilling or any injury of the bloodvessels, etc., with measures to keep the blood circulating properly, including gymnastic training of the lungs by movements of the arms and legs, heart tonics, massage, etc.—*Journal of the American Medical Association*, July 16, 1921.

TEMPERATURE IN DIFFERENTIAL DIAGNOSIS.—Seitz (*Deutsche Zeitschrift fur Chirurgie*) announces as the conclusions of 30 women with salpingitis, a number with appendicitis, and healthy women, that the temperature in the vagina is higher with the gynecologic inflammatory processes than with processes elsewhere, as compared with temperatures in the rectum. A higher vaginal temperature tends to incriminate an ovary or tube, while a higher rectal temperature points rather to appendicitis. This difference is most instructive when it persists or is particularly striking, but the

possible participation of the adnexa in the appendicitic process limits the significance of the finding. In one case, stenosis of the upper rectum was traced to a paraneuritic process by the higher vaginal temperature, when the symptoms and excised scrap had suggested malignant disease.—*Journal of the American Medical Association*, July 16, 1921.

INFLUENCE OF FOOD ON TUBERCULOSIS MORTALITY.—Selter and Nehring (*Zeitschrift für Tuberkulose*, April, 1921) which confirm the decline in mortality from tuberculosis as conditions with respect to food have improved in the last two years. Their tables show furthermore that the highest peak of mortality is generally in the first months of summer. They explain this as the result of the poorer quality of food towards the close of winter, when the vegetables have been kept so long that their vitamin content is low. As soon as fresh vegetables come into the market, the mortality drops, and it is lowest in the fall. Their charts show that the question of food is more important than the housing question, although the housing question, they remark—the overcrowding in the cities—has in many places reached an actually frightful stage.—*Journal of the American Medical Association*, July 16, 1921.

SACCHARIN INTOXICATION. Grundfest (*Zentralbl. f. inn. Med.*, March 26, 1921) remarks that, in spite of the almost universal employment of saccharin during the last few years, he has seen only one case of typical saccharin intoxication, although occasionally some of his patients have complained of headache and loss of appetite after taking it. The typical case was that of a man, aged 45, who, three days after taking saccharin for the first time to sweeten his coffee, presented a bloated face, swollen eyelids, and chemosis, together with a feeling of irritation in the larynx. The temperature was normal, the faucial and laryngeal mucous membranes showed nothing special, and the voice was not hoarse. There was no albumin in the urine. On discontinuing the saccharin the symptoms rapidly disappeared, but some days later, when the patient had taken only three spoonfuls of coffee sweetened with saccharin, the feeling of irritation in the throat returned. The case was therefore an example of extreme idiosyncrasy for saccharin.—*British Medical Journal*. June 18, 1921.

REPARATIVE CHANGES THAT TAKE PLACE ABOUT THE ROOT-ENDS OF INFECTED PULPLESS TEETH AFTER TREATMENT.—Merritt presents the histories of eight cases of periapical infection in each of which the prognosis was regarded as unfavorable. Conditions just before, and long after, treatment are illustrated with twenty-three roentgenograms. "In all cases, tricresol and formalin, as advocated by Buckley, were used for sterilization. No other treatment was employed. Three to five treatments were made. The root canals were filled with chloro-percha and gutta-percha points. Treatment was undertaken with some misgivings. For this reason these cases were kept under observation. In no case has any local or systemic symptom developed, since treatment, that would indicate continuance of infection in these teeth. These cases are reported here for the purpose of showing what may occur in periapically infected teeth, under initially adverse conditions, after treatment."

Merritt agrees with Rhein, and disagrees with Novitzky, in concluding "that, under certain conditions, pulpless teeth may be restored to health and usefulness." His disagreement with Novitzky is noted directly in the addendum to the paper.—*The Journal of Dental Research*. Vol. III, No. 1.

ACUTE POSTOPERATIVE DILATATION OF THE STOMACH.—Novak in a very lengthy paper discusses this important subject and presents the following conclusions: 1. Acute postoperative dilatation of the stomach is an important and dangerous surgical complication which is probably less infrequent than is generally believed. 2. Its early recognition is of vital importance to the patient, for on it, to a large extent, depends the success of treatment. 3. The use of the stomach tube is the most important means of diagnosis. 4. Especially important is the differentiation between gastric dilatation, on the one hand, and peritonitis or postoperative ileus, on the other. 5. Dilatation of the stomach is a frequent concomitant of peritoneal infection. 6. The evidence points strongly to gastric paralysis as the immediate cause of the dilatation. 7. In the primary cases, such as those occurring during operation, the gastric paresis is explainable as a simple reflex. In the secondary cases, the dilatation is the result of septic factors, although it is possible that occlusion of the upper intestine may in rare cases be the primary factor. 8. The two important therapeutic measures are gastric lavage and the postural treatment advocated by Schmitzer. The latter is incorrect in theory, but often successful in its results. 9. There is no place for operative measures in the treatment of acute postoperative dilatation of the stomach.—*The Journal of The American Medical Association*, July 9, 1921.

DERMATOLOGY.

Conducted by RALPH BERNSTEIN, M.D., F.A.C.P.

DERMATOLOGY AND SYPHILIS IN 1920.—According to Gougerot there seems to be an increasing agreement as to the wisdom of large progressive doses in primary syphilis. Milan gives from 0.3 to 0.9 gm. or even 1.2 of neo-arsphenamin in the primary phase. Leredde in the second and third phases begins with small doses, 0.1 increasing to 0.9. With syphilitic disease in the nervous system, kidneys or aorta, the doses recommended are between 0.1 and 0.3. The advantage of associating mercury with the arsenicals is admitted more and more. "The arsenical attacks, but the mercury brings up the reinforcements to hold what has been gained." As to mishaps with the arsphenamins, Gougerot thinks that damage of the organ by the drug and damage by the syphilis both cooperate. Abadie declares that in rebellious cases treatment should be kept up with mercuric cyanide by the vein every second day, from 0.01 to 0.02 gm., for one, two or three years if necessary, and reports success beyond all hopes in certain cases by this means. Gougerot presents the arguments for and against there being more than one type of spirochete, inclining to the negative view himself. He mentions parenthetically a special calendar he gives to his syphilitic patients.—*Medicine, Paris*.

THE TEETH IN SYPHILIS.—Sabouraud cautions against overlooking malformations of the teeth as they may seem normal on casual inspection unless they are counted, and the jaw examined. These signs of the inherited taint are particularly instructive as they are permanent.—*Journ. Amer. Med. Ass'n*.

THE SYPHILITIC NEWLY BORN.—Blechmann points to the mounting tide of infants with inherited syphilis, and the greater recognition of the

ever widening sphere of its evil influence. We must attack it at once and strike hard, profiting by the efficacy of the arsenicals in addition to mercury. He begins with less than a centigram per kilogram, increasing to 0.015 or 0.02 gm. every sixth or seventh day, by the vein, in series of from five to ten injections, with suspensions for a month or two.—*Journ. Amer. Med. Assoc'n.*

CONDITIONS FOR ABORTIVE TREATMENT OF SYPHILIS.—Levy-Bing and Gerbay discovered that the Bordet-Wassermann reaction appeared always after a certain interval from the hour of contagion. If abortive-treatment is pushed before this date it has every prospect of success, but after this date, treatment may retard the appearance of the positive reaction but does not prevent its becoming positive sooner or later. This interval is thirty-seven days long, counting from the hour of infection. Then comes a period of eight days during which the outcome is dubious, but after the forty-fifth day no treatment will ward off a positive reaction. Hence, they conclude, abortive treatment cannot be counted on to be effectual after the thirty-seventh day.—*Medicine, Paris.*

SYPHILIS SHOULD BE TREATED DURING THE INCUBATION.—Tzanck insists that the spirochete should be the calls to arms; we must not wait for a positive Wassermann reaction.—*Medicine, Paris.*

VAQUEZ' ERYTHREMIA WITH INHERITED SYPHILIS.—The patient of 40 showed symptoms of mild hyperthyroidism when the erythremia developed, and he as well as his ten brothers and sisters presented more or less signs of inherited syphilis. Under a course of neocarsphenamin the numbers of red corpuscles rapidly declined from 12 million to less than 6 million, while the leukocytes kept at about the same figure, 8,000. The general condition improved also at the same time.—*Archives des Maladies du Cœur, etc., Paris.*

CANCER OF THE MOUTH.—De Vecchis comments upon the increasing frequency of malignant disease of the mouth. He reports having encountered over twenty cases in less than a year. The extreme rarity in animals, the relative rarity in women, and the increasing prevalence in men all give food for thought. The physician or the dentist who first sees the apparently insignificant lesion, stomatitis, aphthae, leukoplakia, should realize that this is the key to life or death. The dentist should watch out for precancerous lesions and cure them, but beware of inducing malignant transformation by improper treatment, such as cauterizing an ulceration in the mouth with silver nitrate. De Vecchis adds that as cancer develops preferentially in an acid medium, the specific and surgical measures should be supplemented by alkaline mouth washes.—*Journ. Amer. Med. Assoc'n.*

PEDIATRICS.

Conducted by C. S. RAUE, M.D.

EXPERIENCE WITH MORE THAN ONE HUNDRED CASES OF EPIDEMIC ENCEPHALITIS IN CHILDREN.—Josephine B. Neal relates her experience with one hundred cases of epidemic encephalitis in children and refers to the scarcity of literature on this subject. The disease shows a high incidence

in childhood. The majority of cases reported last year occurred in the first quarter of the year.

The symptoms in children do not differ greatly from those in adults. A rather larger percentage of children show a sudden onset, and the course of the disease is ordinarily shorter than in adults, although the mortality is approximately the same. The symptoms comprise both those of a generalized infection, such as fever, headache, vomiting, constipation and malaise, and those more directly referable to the central nervous system. The latter show an almost endless variety. Lethargy was so prominent a symptom in many of the cases that the term "lethargic" was earlier used in describing the disease. This, however, is by no means a constant symptom. Indeed, insomnia is an equally striking phenomenon in many cases, and in some patients both conditions may be present at different times. Convulsions are common, especially in younger children. In many cases delirium is present, occurring either for a considerable time or for short intervals, lasting not more than ten or fifteen minutes and being repeated frequently. Ocular disturbances are of very frequent occurrence and are of wide variety. They may take the form of diplopia, blurring of vision, blindness, ptosis, either unilateral or bilateral, strabismus, nystagmus, and occasionally peculiar motions of the eyes.

Paralyses of wide distribution may occur. The cranial nerves are more often affected. Facial paralysis or paresis, either unilateral or bilateral, is often present and probably causes the mask-like expression so often noted. In some instances the neck muscles have been affected; in one case this was unilateral. Inability or unwillingness to swallow may occur to such an extent as to make tube-feeding necessary. Disturbances of speech are not uncommon. The one observed most frequently is that in which the patient speaks in a slow, monotonous slurring voice, with considerable delay before answering questions. The reflexes show all varieties of change. They may be increased, decreased, lost, equal or unequal. The Babinski sign and ankle clonus are not uncommon. Retention or incontinence of urine occasionally occurs. Constipation is often obstinate. Profuse sweating is fairly common. The more typical meningeal symptoms, such as stiffness of the neck and the Kernig sign, are not common, unless associated with some degree of general spasticity.

The blood count in epidemic encephalitis varies from normal to one showing a moderate degree of leukocytosis, perhaps up to 15,000 or 20,000. Blood cultures are sterile. The urine is negative or shows a mild degree of nephritis common in acute infectious conditions. The examination of the spinal fluid throws more light on the subject than any other laboratory procedure. The spinal fluid shows practically the same picture as in poliomyelitis. It is clear and usually increased in amount. A web rarely forms. The cell count may sometimes be normal. It is usually moderately increased, ordinarily to no more than 100 or 150, though in one case it ran as high as 1,500. The mononuclears usually predominate, but as in poliomyelitis there may occasionally occur a preponderance of polymorphonuclears. As in poliomyelitis, the fluid may in rare instances be slightly blood tinged, probably indicating a more than usually severe hemorrhagic process. The albumin and globulin are increased, usually slightly to moderately. The glucose, as measured by the qualitative reduction of Fehling's solution, is normal.

The diagnosis from poliomyelitis, especially the encephalitic form, is practically impossible except by neutralization tests of the blood serum. These tests are difficult to perform and are not always conclusive.

Brain tumor and abscess of the brain must also be differentiated; and these conditions have proved a stumbling-block to very able neurologists. Brain tumor is comparatively rare in children.

Syphilitic conditions of the central nervous system must always be considered, and they may be ruled out with a fair degree of assurance by the result of the Wassermann test and the colloidal gold test of the spinal fluid.

The general treatment is of great importance and consists, in brief, in general hygienic measures, keeping the patient comfortable, quiet, and well nourished. Feeding by gavage may be necessary. There must be careful attention to the elimination, as constipation is often persistent and obstinate, and retention may occur. While numerous drugs and intra-spinal injections have been used, the degree of success attending any of these measures has been small. Lumbar punctures for the relief of pressure have seemed of value and are recommended by many writers.—*Jour. Amer. Med. Asso.*, July 9th, 1921.

OPHTHALMOLOGY.

Conducted by WM. M. HILLEGAS, M.D.

OPHTHALMOLOGY FROM THE VIEWPOINT OF THE CLINICIAN.—Homer E. Smith, New York, having spent half his life in clinical medicine, and half in ophthalmology, finds it impossible to think in terms of either separately. Excepting trauma and localized exogenous infections, he states that diseases of the eye are pathologic sequences (of endogenous origin) to septic, toxic, or biochemical changes in the cells and are usually but the smaller part of the morbid process. What makes it of paramount importance may not be the underlying disorder but the menace to the vital function of the eye. In analyzing conditions which have brought about diseases of the eye in many instances no account can be taken of the etiologic factor, for, in not a few cases, the disorder comes under the caption "of unknown origin." Again, there are cases where the secondary lesion is of so serious and permanent a character that no radical improvement can be expected from the removal of the primary cause. There remains a large group of systemic disorders with ocular disturbances, which do not admit of the removal of the cause because this is no longer active and we are confronted with lesions in a far advanced and terminal stage for which amelioratory measures only are possible. There is also to be considered the possibility of concurrent maladies. That a patient has a positive Wassermann does not prove by any means that the ocular disorder is luetic, especially if clinical evidences of the disease are lacking. He holds that any examination is incomplete that leaves uninvestigated any possible source of mischief.—*Arch. of Ophthal.*, March, 1921.

TREMORS DUE TO EYESTRAIN.—W. W. Kahn, Detroit, Mich., presents the subject of objective and subjective tremors due to uncorrected anomalies of the refractive system. He distinguishes between objective tremors, which consist of peculiar sensations in the smooth muscles, particularly in the hands and arms, although they may appear in other sets of muscles

such as the legs, the chin, the tongue, the cheeks, and which are visible and demonstrable to touch, and what he calls subjective tremors, which are not truly such but only offer sensory resemblances and which are felt particularly in the viscera. These tremors are by no means choreic in character and as a rule are so slight that they are easily overlooked. The pathological explanation is an overstimulation of the nerve centers of the eye, especially of the sympathetic system. He reports a series of 647 cases, of whom 45 per cent reported back to him with 87 per cent. cured.—*American Journal of Ophthalmology*, June, 1921.

IMPAIRMENT OF VISION DURING PREGNANCY.—Coutela cites figures showing 19 deaths among 169 women with pregnancy retinitis, while 20 were left blind. In 63 cases in which the fate of the child is known, only 26 were born alive, and 14 died soon after birth—a total mortality of 51 in 63 cases. These figures, he says, “confirm the dictum of the Americans that the pregnancy must be interrupted in cases of albuminuric neuroretinitis.” He adds that in the last months of the pregnancy it might be advisable to wait until vision drops below $1/6$, in the hope of obtaining a living child.—*Medicine, Paris*, April, 1921.

ROENTGENOLOGY

CONDUCTED BY WALTER C. BARKER, M. D.

THE INFLUENCE OF X-RAY ORGAN STIMULATION ON THE COAGULATION MECHANISM.—After raying the hepatic, splenic and intestinal regions of the abdomen for varying periods of time, Saelhof observed a shortening of the coagulation time of the blood. The experimental work was done on dogs.

He concludes that following the raying of the splenic area, there is a marked shortening of the coagulation time of the blood, as determined by the capillary tube method and that there is also a similar effect when the hepatic and intestinal areas are rayed. However the mechanism of the alteration in the clotting time, varies when different areas are rayed. For instance raying of the splenic area, is followed by an increase in the prothrombin and antithrombin, a rather delayed increase in fibrinogen, with little alteration in the platelet count. While raying of the hepatic region, was followed by considerable increase in the platelet count, and raying of the intestinal region, by considerable increase in fibrinogen.

Inasmuch as the effects of the x-ray exposure are quite prompt, the use of this measure in surgical cases, as well as in the management of medical ones associated with a hemorrhagic diathesis, seems a feasible procedure.—*Am. J. Roentg.*, April, 1921.

SELECTIVE ORGAN STIMULATION BY ROENTGEN RAYS: ENZYME MOBILIZATION.—Petersen and Sealhof were led to make their studies of enzyme mobilization following regional irradiation of the abdomen by x-rays and similar agents, because of the work of Heile and Neuberg. Heile found that irradiation of the body by x-rays was followed by destruction of leucocytes, which caused the liberation of large amounts of proteolytic enzymes, and these enzymes attacked other tissues than those irradiated. Neuberg observed during the treatment of tumors by x-rays and similar agents, the enzymes which normally have to do with anabolic processes of the cell, were destroyed; while those enzymes which bring about autolysis were not altered.

In their experiments the authors used dogs and rayed the abdomen through the hepatic, splenic and intestinal regions. Their studies included the nitrogen secre-

tions, the noncoagulable nitrogen of the serum, the leucocyte and differential count, the coagulation time of the blood, the titer of the serum protease, peptidase, esterase, diastase, the anti-trypsin and complement titer.

The purpose of the study was to determine whether there are alterations in the titer of the serum enzymes after raying different organs of the abdomen, whether variations in the serum enzymes take place, and if the influence of different degrees of stimulation, alters the titer.

There is an individual description of each study, stating the chemical test used, and the results when different organs are stimulated. The subject of remote Roentgen ray therapy is then discussed, and stated briefly as follows:

Clinically, the uses of the x-rays and relative radioactive agents have been for diagnosis and local therapeutics. Edsall and Pemberton called attention to the remote therapeutic effects, by using the x-rays to stimulate antilytic processes, and by their effects, to hasten autolysis in unresolved pneumonia. Manukhime found that raying the spleen had a favorable effect upon tuberculous processes; while raying the liver, seemed to make these processes more active. He sought to explain these effects as being due to the different leucocytic reaction, when different organs were rayed. The authors think that is it partly due to changes resulting in the serum enzymes, when different organs are rayed. Drey and Losser have recently called attention to the effects of splenic stimulation on bronchial asthma. Stephan has shown the effect of splenic irradiation in shortening the time of blood coagulation.

Petersen and Sealhof think that if pathological lesions are to some extent influenced by serum enzymes, it would be possible through x-ray organ stimulation, to offer a means of therapeutic control.—*Am. J. Roentg.*, April, 1921.

UROLOGY

Conducted by LEON T. ASHCRAFT, M.D.

THE DECAPSULATION OF THE KIDNEY.—Vogel (*Munchener Medizinische Wochenschrift*) adds fourteen cases of his own to the evidence already strong of the benefit of decapsulation of the kidney in cases in which this operation is called for.

Surgical treatment of kidney diseases is associated with the names of Harrison and Edebohls; the former used incisions in the capsule to relieve tension in cases of swollen kidneys in infectious diseases as scarlet fever and influenza. The clinical results fully justified the procedures. Edebohls reported favorable results from removal of the capsule in cases of kidney atrophy. In these cases the result hoped for and attained in a large percentage of cases was restoration of circulation by anastomosis of the kidney vessels with surrounding vessels after the interference offered by the thickened capsule was removed. Sipple cured a case of eclampsia by removal of the capsule of the kidney, and at a later date reported forty-six operations of the kind with thirty cures. Many cases of removal of the capsule have since been reported from various sources, and it would seem strange that the operation is not even more employed in view of the favorable result reported by Kummel in a large number of cases.

The present paper gives the results in fourteen cases. The history of these cases is given in detail. Four of the cases were scarlet fever, nephritis, one diphtheria, one angina, seven acute nephritis, finally one amyloid kidney. Thirteen of them only may serve as cases whereby the

effects of the operation should be judged; that is, the case of amyloid degeneration may be excluded, from the nature of the case. Eleven cases showed cure of the kidney trouble, the albumin disappeared from the urine as well as the formed elements, the edema also, and no signs of uremia appeared. Two cases died which would have recovered, Vogel thinks, if the operation had been done earlier.

The anesthetic to be preferred is chloroform, requiring at most 15 c.c. The operation took at the longest eighteen minutes even when both kidneys were operated upon. Incision down to the kidney was made along the border of the sacro-lumbar muscle, reaching in with the finger, incising a small opening in the capsule, then inserting a blade of the scissors and cutting from pole to pole. The capsule is shoved back on both sides and as much of it as possible removed. Remnants do no harm. Any spouting vessels are clamped, ligation is seldom necessary.

The internist must be the one to decide upon the indication for operation.

A new connective tissue layer is quickly formed over the kidneys from which the capsule is removed, but this does not interfere with the results of the operation.

The earlier the operation the better.

***NEPHRECTOMY IN RENAL STONE.**—N. J. MacLean (*Journal-Lancet*) points out that the difficulty in arriving at a decision as to nephrectomy in cases of stone is not in those cases where the kidney is mostly destroyed or where a large pyonephrotic sac is present or where the remaining kidney tissue is highly inflamed, but in those cases where stones recur after removal from comparatively good kidneys. These cases of recurrent stone require, and in fact every case of urinary stone requires, most careful, pre-operative and post-operative treatment. The free use of distilled or rain water, or water from certain springs that do not contain lime salt can do no harm and may do a great deal of good. Changing the reaction of the urine, if highly acid, by large doses of potassium citrate or, if alkaline, by acid sodium phosphate combined with urotropin, or by an intensive treatment alternating from one to the other from time to time, is of decided benefit. The author advises the use of an autogenous vaccine as he believes that in many cases there is an infective factor in the recurrence of stone.

Irrigation of the renal pelvis, after nephrolithotomy, with 0.5 per cent. silver nitrate solution twice weekly, the strength being increased and continued until infection has disappeared, promises good results.

When, however, conservative measures have proved futile, the patient's best interests are served by a secondary nephrectomy.

SURGERY

Conducted by J. D. ELLIOTT, M.D.

TUMORS OF THE BONY CHEST WALL.—Hedbloom has collected 165 thoracotomies for these tumors and has added 23 cases from the Mayo Clinic. He briefly reviews the etiology, symptoms and diagnosis in these and 25 non-operable cases in the Mayo Clinic, but describes the treatment in more detail. His summary covers his findings. 1. Tumors of the bony chest wall are relatively rare. In 213 cases (61.4 per cent. sarcoma and

18.7 per cent. chondroma) the ribs were primarily involved in 78.7 per cent., and the sternum in 21.3 per cent. 2. Trauma seems to be etiologic in some cases, both with regard to incidence and to malignant degeneration of the benign forms. 3. Pain is the most characteristic symptom and may be present in the case of a benign as well as of a malignant tumor. Pain may be present before the tumor is recognized. 4. Early differential diagnosis of neoplasm and cold abscess, exostosis, aneurysm, and dermoid cyst may be difficult. Preoperative differentiation of a benign or a malignant neoplasm may be impossible. 5. Early radical extirpation offers the best prospect of prolonging life and cure. Late radical or palliative extirpation, even in the presence of extensive involvement, may result in a relatively long period of freedom from recurrence. 6. Early exploratory thoracotomy is indicated in any doubtful case. 7. Differential pressure anesthesia, while not essential to the successful removal of tumors involving wide opening of the pleural cavity, obviates the risk incident to sudden open pneumothorax, and by preventing a closed pneumothorax may lessen materially the occurrence of postoperative shock, pneumonia, and empyema. 8. Intratracheal or intrapharyngeal insufflation anesthesia affords an effective means of preventing operative pneumothorax. 9. Shock, pneumonia, and empyema are the common causes of postoperative deaths. 10. Recurrence has been the rule in most cases of malignant tumor; but there may be freedom from recurrence for many years and life may be further prolonged by repeated extirpation of the growth.—*Archives of Surgery*, July, 1921.

SURGERY OF CYSTS OF THE SPLEEN.—Fowler has very carefully analyzed all cases of splenic cysts he could collect in literature. The author reported 86 cases of non-parasitic cysts in 1913 and the object of the present paper is to bring his former studies up to date and add a case of dermoid cyst and a study of parasitic cysts.

There are just two authentic cases of dermoid cysts recorded and the only parasitic cysts reported in literature are due to echinococcus. This latter type is rarely a surgical problem of the spleen alone, for in about four-fifths of the cases the liver or other organs are involved. There are about one hundred recorded cases up to 1890. The mortality for twenty-three cases subjected to splenectomy up to 1908 is about 17 per cent.

The 90 cases of non-parasitic cysts which the writer has collected represents a variety of types due to various causes and are classified as true and false, depending upon the mode of origin. Malaria and syphilis are not more than minor contributing causes and the same is true of pregnancy, although non-parasitic cysts are most common in women during the child-bearing age.

In the case of pseudocysts, trauma plays the most important role in the simple, large unilocular, so-called hemorrhagic or serous type; the latter usually develops secondarily from the former. The influence of twisted pedicle, embolism and disease of intrasplenic blood-vessels cannot be denied.

In the case of true multiple cysts, inclusions of misplaced cellular nests (endothelium of the peritoneum or cells of origin of lymphatic spaces or vessels) during the developmental period, or as a result, in later life, of traumatic or spontaneous rupture of the capsule or of perisplenitis,

may result in multiple cysts of the serous or lymphatic variety. True neoformative cysts (lymphangioma haemangioma) are not common.

Sixty cases of non-parasitic cysts have been treated surgically, eleven by puncture, fourteen by incision and drainage, six by excision or partial splenectomy, thirty by splenectomy. The latter is usually the method of choice. The mortality for splenectomy is 3.5 per cent.—*Annals of Surgery*, July, 1921.

AUTOGENOUS BONE TRANSPLANTATION.—Henderson has carefully reviewed his experience with 431 patients subjected to the operation of transplantation of bone. The article deals principally with the results obtained but includes a plea for the massive grafts in preference to intramedullary or inlay grafts.

One hundred and sixty-six of the patients were operated on according to the method of Albee for tuberculosis of the spine, and 247 were operated on for ununited fractures, bony defects, etc. One hundred and thirty-two patients with tuberculosis of the spine operated on more than eighteen months before have been definitely followed. Sixty-six (50 per cent.) may be regarded as cured or as having the disease arrested; twenty-nine (22 per cent.) were improved; twenty-two (16.66 per cent.) were unimproved; twelve (9 per cent.) died later, probably of disseminated tuberculosis; three (2.26 per cent.) died so soon after the operation that their deaths must be classed as operative mortalities. The operation is advised only in adults; four (2.4 per cent.) developed infection of the wound in the spine; there were no infections in wounds of the leg. Two grafts were lost.

Two hundred and twenty-three of the 247 patients operated on for ununited fractures, etc., were traced. In 177 (79.3 per cent.) the operations were successful, and forty-two (18.8 per cent.) were failures. Four (1.7 per cent.) of the patients died. Two hundred and forty-one operations were necessary to obtain these successes; thus, the 73.4 per cent. successes are based on the number of operations rather than on the number of patients. In contrast to the spinal cases, which were better than the average in any group of clean cases, the percentage of infection ran high. Thirty-nine (15.7 per cent.) of the 247 patients developed infections. Two hundred and one had clean wounds. Many of them have been operated on before without suppuration, but often with considerable scarring; twenty (9.9 per cent.) of these became infected. Forty-six patients had been infected previously, although apparently the wounds were clean at the time of operation, and in nineteen (41.3 per cent.) suppuration followed surgical interference. These infections caused the loss of the graft in fifteen cases (6 per cent.), and in most all a persistence of the nonunion. The technic used in the spinal transplants was used in the fracture transplants. In the first group the percentage of infections is considerably below and in the second, above normal. Therefore the author believes that the cause of infection rests on the type of case rather than the technic. Possibly a two stage operation would lower the percentage of infections.

The percentage of successes in operations on the various long bones was: tibia, 89.4; ulna, 81.2; radius, 78.4; humerus, 69.6; femur, 57.5. The massive graft with beef-bone screws to hold it in place has given better results than either the intramedullary or the inlay graft.—*Jour. Am. Med. Assn.*, July 16, 1921.



Truly yours
Ruyup Luan

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THE FUTURE OF HOMŒOPATHY

BY

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(Read before the Homœopathic Society of Philadelphia County, May 12, 1921.)

I. THE FUTURE OF HOMŒOPATHY is the subject uppermost in the minds of many followers of Hahnemann, who are watching the trend of events in the medical world. Between the irrepressible optimists who see only the brightest prospects, and the unmitigated pessimists who entertain gloomy anticipations of the final extinction of homœopathy, are those who are able to distinguish between the transient and the permanent, between the essential and the non-essential; and these see that, while many changes must come and some cherished things must be sacrificed, all that is good and of real value in homœopathy will remain.

II. It would not be judicious to consider the homœopathic situation without first taking a look over the general field; *for medicine is greater than any school, cult, or specialty.* We are all physicians first—members of the great living body of medicine, of which homœopathy is an integral part. In the last analysis, there are no “local diseases.”^{*} We may find that the ills of both schools are constitutional; that they have a common origin *and a common remedy.*

I am going to roughly analyze the medical situation, and then see what can be made out of it, from the standpoint of a progressive who is willing to “give and take,” in the reorganization of homœopathy which must come if we are to continue to live as a school, or maintain in their integrity the principles for which we stand.

I am one of those who are willing to give up some of the things in our school which we have clung to—for a *quid pro quo*. There are some things in both schools which I would be glad to get rid of, at any price, or no price at all; but there are other things I would never give up in either school, though I died (professionally) fighting for them.

Let us look at the worst first, and have it over with.

For three thousand years "Regular Medicine" has been hampered by the lack of a general principle of therapeutic medication. The resulting interminable series of changing theories, opinions and methods, based upon imperfect observation, faulty analysis, hasty and incomplete generalization and illogical deduction, have disappointed the hopes and destroyed the faith of its seekers after pharmaco-therapeutic truth, and led at last to their virtual abandonment of medication. *Pharmacology and pharmaco-therapeutics are no longer taught in their colleges nor required by the State Boards.*

In the absence of any general law, the immense and ever-increasing mass of details of fact, brought out by so-called "Medical Research," continue to bewilder the practitioner, whose changes in methods of treatment must keep pace with the constantly changing theories.

In spite of the fact—perhaps partly because of the fact—that medicine, through organization, has become one of the most powerful bodies in the world, it is today in a very dangerous position. Its influence extends into and is organically linked with nearly every department of public life, and through this it touches private life on many sides. Unfortunately its power is not always exercised with due regard to the rights and privileges which are guaranteed to individuals under a republican form of government. In its attempts to compel submission to its authority in matters of public health it frequently invades the domain of private rights and arouses strenuous opposition. Especially is this the case when it attempts to force dangerous and repulsive methods of treatment and prophylaxis upon the public. Consequently the medical profession is losing the respect and confidence of the people. It has come to be more feared than loved, and that is always a sign of danger.

The profession is torn by internal dissension, discouraged by failures, harassed by public and private criticism and destructive legislation, split up into numerous fragmentary and

futile "specialties," dominated by inside cliques, and subjected to constant attrition and disintegration by powerful outside, antagonistic cults and movements, lay and semi-professional.

Driven to the wall and fighting for life, medical politicians are striving for still greater power of compulsion, to be exercised through national, state and municipal agencies. These measures are supplemented by extensive and ably conducted propaganda, in popular articles enlarging upon the wonderful advances in surgery, bacteriology, hygiene, sanitation, trained nursing, prophylaxis, hospital service, health department service, social service and welfare work. Their aim is State Medicine.

The rank and file of the profession are trying to save the day and maintain their hold on the public by private hospital organization, specialization, "group medicine" and "diagnostic institutes."

But of scientific medication, or any definite *curative* treatment; of the adaptation of remedies to individual cases of disease, allopathic medicine has nothing to say and little to offer. It does not even profess to *cure*; it would merely "aid nature" to bring about natural recovery.

This unfortunate situation has been brought about primarily by the failure of the medical profession to fulfil its highest mission and *cure the sick*, and this it has been unable to do because it has failed to recognize, or refused to accept and apply the governing principle of pharmaco-therapeutics discovered and systematized by Hahnemann.

In the past the old school has denied the existence of any general principle of curative medication, and ridiculed or denounced those who affirmed the contrary; but today it is not so sure. Its attitude is not so antagonistic to the idea of a pharmaco-therapeutic law as formerly.

It still clings to a few of the old, well-tried medicines in certain diseases, which occasionally bring about surprising curative results and suggest the possibility that their action may be governed by a general principle. It has begun to experiment, tentatively, with homœopathic medicines. It admits that the action of some remedies, including the serums, vaccines and endocrines, can best be explained by the homœopathic hypothesis.

Individuals, working quietly in these various lines of research and occasionally publishing their conclusions and results

have gained the attention of that part of the profession which is not dominated by the pessimists, politicians and organization men, and inspired them with new hope and new ambitions.

For not all of the rank and file of the profession have been blind followers of their leaders into pharmaco-therapeutic nihilism. Many have kept an open mind, holding on to that which they believe to be good, doing the best they can to fulfil their mission as healers, and watching the trend of events toward that ideal of which no true physician has ever entirely lost sight—the recognition and acceptance of a general principle upon which a true science and art of curative medication can be erected, and a united and harmonious profession. They are about to reap their reward.

III. The parallel lines of therapeutic research have begun to converge. Workers in the departments of biology, morphology, pharmacology, endocrinology, serology and vital dynamics are finding that their results are all explainable by reference to a certain general principle enunciated and demonstrated more than a century ago by Samuel Hahnemann and by him developed into a pharmaco-therapeutic system tentatively called homœopathy.

Accepted only by a small minority in the medical world, the homœopathic principle was rejected and vigorously opposed by the great majority, and the followers of Hahnemann were forced into sectional seclusion by professional ostracism.

The sect grew, organization proceeded and in the course of time, homœopathy became a flourishing institution, especially in the United States. But in the stress of conflict and the zeal for organization quality was sacrificed to quantity. Abuses crept in. Standards of practice were lowered. Fidelity to principle, purity of practice and perfection of technic became the ideal of the relatively few. Service deteriorated. The organization became more important in the minds of the majority than the principle and methods which it was created to preserve.

Homœopathy, as an institution, began to decline. Then came the educational war against it by the American Medical Association. Several of its colleges and hospitals were closed or passed into the hands of the old school. Of the five homœopathic colleges now remaining in this country, three are in a precarious condition and probably soon to close. Of the two which would remain only one seems to have all the

elements of permanency. I leave you to guess which one that is, and to accord it due honor in its lonely eminence.

The homœopathic branch of the profession is rapidly diminishing in numbers. Its ranks are being decimated by death alone faster than they are being filled by new graduates. There are hundreds of cities and towns now without a single homœopathic practitioner, where formerly several prospered. The old practitioners have died or retired and there are none to fill their places. The large cities absorb all the new ones and would take more if they were to be had. The small cities and towns appeal in vain for homœopathic physicians to come and locate in their midst.

One of our finest hospitals has recently passed into the hands of the dominant school and others will soon do so because there are not enough homœopathic physicians left to support them.

Our societies, homœopathically speaking, are decadent. If they maintain their membership and activity it is more because of their interest in other departments of medicine and surgery than in homœopathy itself. Many of our small, local societies have gone out of existence, through deaths, removals, or loss of interest.

The *morale* of the school is low. There is a general lack of interest in things homœopathic. The systematic study of *materia medica* is neglected. Accurate prescribing is the exception rather than the rule. Methods of examining and prescribing for patients are lax and unscientific. The technic of our art does not receive the attention it should. We lack *conviction* and we lack *enthusiasm*. Hence we languish.

IV. In considering the forces which have tended to disintegrate the homœopathic organization we cannot overlook that element within our own ranks, whose course of action has done so much to weaken and discredit the school. I refer to those selfish, flippant or cynical individuals, who lose no opportunity to belittle the founder of homœopathy and his works, sneer at his conscientious followers and ridicule the methods of men who have devoted their lives to improving the technic of our art. Restrained by no sense of professional unity, loyalty or fraternity; ignorant of the history, philosophy and higher principles of homœopathy, and possessing not even the rudiments of a scientific method themselves, these Bolsheviks of homœopathy shoulder their way recklessly through the

world, trampling the finest flowers of homœopathic culture under foot and leaving a trail of destruction behind them wherever they go. No word better describes the course of action of this element within our ranks than the word "sabotage"—a term used to describe the process of *covert attacks on machinery* and the deliberate *slacking on jobs*—"a sort of crime bearing the same relation to bomb planting that the sneak thief does to the burglar," as the New York Tribune says.

Homœopathy has machinery by which it functions in its various departments and it has more than its fair share of Bolsheviks who are always ready to put sand in the bearings, toss in a monkey wrench or slack on the job of healing the sick.

Which leads me to remark: That we have never raised ourselves in the estimation of the profession at large, nor come one step nearer to securing the recognition which so many have desired, by compromising or compounding our principles of therapeutic medication. The "Old School" knows as well as we do that homœopathy is a *system of therapeutic medication* governed by the principles of *symptom similarity*, the single remedy, drug proving, potentiation and the minimum dose. By that we are judged and by that we must stand or fall. We may use as many measures of surgery, hygiene and mental or physical therapeutics as we please, without criticism; but when it comes to the use of drugs for therapeutic purposes we must toe the mark or take the consequences of our inconsistency. There is no more respect for a hyphenated homœopath, than there is for a "hyphenated American."

The first and worst mistake of the followers of Hahnemann, however, was their misconception of the true nature and scope of homœopathy. In their enthusiasm for the new method of healing and in the heat of the struggle to defend themselves from the attacks made upon them, they went too far in representing it as a complete system of medicine, forgetting that it is only a department in the great field of general medicine. This introduced an unnecessary element of discord and placed them in a false position. It led to the adoption of a *wrong educational policy* which survives to this day.

Properly defined as a department of medicine, homœopathy is the science and art of pharmaco-therapeutics—a sys-

tem of therapeutic medication, governed by the principles of symptom similarity, drug testing on the healthy, the single remedy, potentiation and the minimum dose. Its scope is co-extensive with the realm of vital dynamics. It deals primarily with morbid vital or functional changes in the living organism and only secondarily with the tangible results or end-products of disease. In practice it is a specialty and as such it should be taught and represented. Thus defined in its scope and sphere of action, homœopathy is an integral part of general medicine, correlating perfectly with every other integral part.

V. One of the hardest things for us to understand has been the refusal of the dominant school of medicine to give serious consideration to two of what seems, to some of us, the most important demonstrations of the truth and scientific character of homœopathy that can be made, viz. : 1. Evidence of its agreement, philosophically, with other sciences, in that its fundamental principle has been identified as an application in therapeutics of *the Universal Principle of Reciprocal Action*, operative alike in the physical, chemical and vital departments of nature. 2. Evidence of *results* so far superior to those of any other form of treatment that they would seem to be, in themselves, convincing proof to any reasonable mind.

Scientific men generally—chemists, physicists and biologists, for example—are usually ready to compare results and discuss the principles, theories and laws which underlie their respective sciences. They are quick to seek a common ground and a common language on that plane of thought. They realize that no department of human knowledge has ever become a science until its “primitive fact” or law was discovered. They also realize that the laws of nature are all related and harmonious, and, therefore, that there can be no antagonism or disagreement between true sciences. When a candidate for admission to the “Circle of the Sciences” can present verified results, obtained by the systematic application of a practical method, which is based upon principles which have been legitimately derived from a general law of nature, as homœopathy does, it is usually accepted. That homœopathy has not been accepted is partly due to the fact that medical men in the past have not been much interested in philosophy—in general principles, laws and theories—nor in the deeper relations between medicine and other sciences.

If they had conducted their pharmacological research in

the light to be gained from a study of its basic relations to biology, morphology, chemistry and physics, perhaps homœopathy today would be an accepted science and allopathy would not be medicinally bankrupt. I am happy to see and to say, that a more general interest in this subject has been awakened and that an earnest and intelligent effort is being made by a goodly number of workers in both schools to repair the damage caused by this error of omission. The greatest minds in homœopathy, like those in other sciences, have always worked from the philosophical standpoint. The greatest practical successes have always followed the most intelligent apprehension and strictest application of clearly defined principles. The progress of homœopathy in the future will be in proportion to the increase and spread among us of interest in the philosophical aspects and scientific relations of our art. In brief, it depends upon a more broadly educated and homogeneous profession.

VI. As an institution, homœopathy has won and received due legal recognition. Its colleges, hospitals, dispensaries and societies, as well as its individual representatives, have the same standing, rights and privileges before the law as those of other institutions. In spite of its proven therapeutic efficiency, however, homœopathy has gained but little recognition in the medical world. Until recently its merits as a therapeutic system have been so obscured by clouds of dust and the "poison gas" of sectarian warfare and partisan propaganda that there has been little opportunity for calm consideration of its scientific claims. Under such conditions the rank and file of old school medicine accorded the homœopath and his cures about the same kind of recognition that a mule accords an annoying fly—a wriggle of his thick hide and a switch of his tail—which suggests that they "do not know a good thing when they see it." It is a fact that cures, such as competent homœopathic prescribers frequently make, are incomprehensible to the average old school man—and I might add—to some in our own ranks! Looking straight at a cured patient, as the obstinate countryman looked at his first giraffe, he shakes his head and says: "There ain't no sech animile."

Take the cure of a young physician whom I treated recently; in whom the excruciating pain of a case of acute cystitis and pyelitis, of two weeks' duration, with hematuria, constant tenesmus and intense pain radiating to the testicle,

was entirely relieved within thirty minutes by a dose of pulsatilla 200, which gave the first night's sleep the patient had had in over a week and brought about a rapid cure. Nothing could convince a physician who witnessed it that I had not given an opiate. He had no conception of the nature of a specific, curative action, as displayed by a remedy selected on the principle of symptom-similarity and administered in infinitesimal doses, and he is unable to discriminate between cure and recovery. Such things simply have no existence for him and he cannot believe the evidence of his own eyes.

That which homœopathy has to offer as therapeutic science looks so unlike what regular medicine has evolved, both in methods and results, that it is perhaps not strange many do not recognize it. It is beyond their ken because its scientific foundations are laid in a field of thought and research which few of them have even entered. Few physicians have followed the higher reaches of scientific thought, dealing with general laws and principles, into that region where all sciences converge toward a unitary conception and find common ground and a common language.

In that region it may be seen that the results of homœopathic prescribing are due to the systematic application, in a special field, of general principles which are harmonious or identical with the general principles of other sciences. However satisfying this may be to scientists and philosophers, it does not satisfy the average medical man. He wants something other than the evidence of alleged cures which he does not credit and explanations which he does not understand. We have offered him a vitalistic-dynamical explanation demonstrated at the bedside. He demands a physico-chemical explanation demonstrated in the laboratory. (At bottom, of course, this is merely a phase of the old battle-royal between the philosophers of the materialistic and idealistic or spiritualistic schools, transferred to medicine, and not confined to either medical school.) Very well. So be it. He shall have research and laboratory proof to his heart's content. And we shall open up to him, besides, a realm to which he has been blind—the realm of Life and Mind and vital energy.

Scientific research is constantly confirming the philosophical postulates and practical results of homœopathic authorities in the use of medicines. Note the able article by Phemister, Miller and Bonar in the *Journal of the American*

Medical Association, March 26th, on the curative effects of phosphorus in doses of 1/200 of a grain, in a diseased condition of the epiphyses of the long bones—long and well known to us.

The latest news, startling because unexpected, is the announcement that the *Pasteur Institute of Paris is investigating homœopathy*. The Preparateur, Dr. Henri Dejust, writes, March 8, 1921: "I am actually studying, in view of a publication, the scientific value of the facts on which homœopaths ground their theme. My purpose is neither to attack or defend their theory; my only object is to get as near truth as it is possible to do." He outlines the scope of the investigation, limiting it to measurable data, states that he will quote, as a sample of such work, the proving of benzol, iodine and kali bichronicum conducted by my friend, Dr. R. F. Rabe, as published in the *Homœopathic Recorder*, August, 1920, and requests the co-operation of homœopathic physicians.

He says: "You will be pleased to hear that a thoroughly impartial book is being prepared on homœopathy and that the author has conducted a most extensive investigation." Many more examples showing the increase of interest in homœopathy in the old school might be presented if time permitted. Enough has been said to show the trend of events.

Through observation of the results obtained by our competent prescribers, and by their own tentative experiments, the leading thinkers and ruling element in the old school have come to respect homœopathy as a system of therapeutic medication. They are ready to accord it consideration and receive us individually into their ranks as soon as we abandon our dogmatic, exclusive, self-sufficient position, lay down the arms of sectarian warfare and seek our rightful place with them simply as legally qualified *physicians*. With that general acceptance go the rights and privileges accorded to any specialist in medicine and surgery. As pharmaco-therapeutic specialists we shall be at liberty to apply our therapeutic principles in practice without question. We may establish and maintain special medical hospitals, schools and societies for demonstrating, teaching and promoting the science of pharmacology and homœo-therapeutics if we choose. Once we have identified ourselves with the great organized body of physicians by *individually* joining their representative societies and working in harmony with them, there will be no question about "freedom

of medical opinion and action." We shall be free as all other members of the profession are.

VII. Have we not made a mistake in formulating our course of action? Certainly we want *the truth* of homœopathy to be recognized and accepted by the medical profession.

Let us not forget, however, that recognition of an exclusive, antagonistic, *militant* organization and recognition of *a scientific principle, system and method*, limited to a special field, are two very different things. Organizations may be and often are antagonistic—scientific principles never are.

The spirit of sectarianism—that ugly, selfish, hypocritical thing which has riven the body of medicine in twain—is dying out—in both schools. For, without a doubt, it has existed, and still exists, and mutual recrimination has only helped to keep it alive. It is time to put such things aside; to "let the dead bury the dead," and to preach the gospel of "peace on earth and good will to men," to the medical world.

Spiritually, the medical profession is "in a most hopeful state," as the old-style theologians would say. It is like the tough boarding house beefsteak, made tender by the vigorous pounding it has received from the potato mashers in the hands of christian scientists, faith healers, mental science healers, osteopaths, optometrists, chiropractors, newspaper, corner drug store and department store prescribers.

There is a large body, perhaps a majority, in the old school who are frankly dissatisfied with so-called "modern medicine," its methods and its policies, who wish for something better. They are receptive of new ideas when they are properly presented. In therapeutics they are seeking and finding help in homœopathic remedies. Our pharmacists report that they have many regular customers for homœopathic medicines and potencies among old school men.

Many of our old school brethren are willing and interested listeners to an intelligible, non-partisan presentation of homœopathic principles. Within the last month I attended a large meeting of allopathic physicians and endocrinologists, where homœopathic principles, methods and remedies were openly discussed and recommended, and illustrative cases were presented. I felt quite at home among them. The frankness and enthusiasm displayed would have put to shame some meetings of homœopathic societies I have attended.

What does all this mean? Does it mean that the old

school has surrendered and is meekly coming over into our camp?

Let us not flatter or deceive ourselves. They are doing nothing of the kind. On the contrary, in military parlance, they are invading our territory, destroying our defenses, disarming our fighting men and confiscating our stores. In the political and especially in the educational field, they have gained full control. We are at their mercy, they are absorbing our wealth of treasured knowledge, our methods, our institutions and our men—everything but our name and our philosophy. But they are not barbarians, Goths and vandals, like those who overran the Roman Empire. They seek to destroy nothing but the spirit and the machinery of internal warfare. They seek peace and co-operation. They want a united profession. They are arriving, over their own long and laboriously constructed inland roads of research and experience, on the rich coast we reached long ago by a stormy voyage over uncharted seas. They bring great treasures with them which they offer in exchange for peaceful union and co-operation in the development of the vast "hinterland" open to both of us. What shall we do about it?

VIII. Practically every phase of the warfare between the two schools has centered in, or been conducted from the educational field. Many skirmishes and minor battles have been fought elsewhere, of course, but the educational field has been the strategic position. There it is being fought today, with the homœopathic forces in a state of siege.

When we set up separate preparatory colleges to compete with the old school colleges in teaching general medicine, in order that we might teach homœopathy in them, it was construed as a treacherous thrust at the very vitals of orthodox medicine. It meant war to the knife. Naturally the old school determined upon the destruction of those colleges, and to that end they fought unceasingly. If we had elected to depend upon the old school colleges for general medicine; had continued the personal or group instruction in homœopathy with which we began; had established modest *post-graduate* schools and hospitals when the need arose, and had worked in a conciliatory spirit for the composing of differences, things might have been very different—then and now. That, I think, is what we should do now.

The policy which led to the establishment of separate pre-

paratory colleges has proven, in the long run, to be wrong. While it brought desirable results in some respects, it was at a tremendous, a ruinous cost, as we can see now. However necessary or advisable it may have seemed in early days, there are many good reasons against doing so now.

It is an economic error, a financial impossibility and an educational failure under present conditions. One by one our colleges have gone, or are going, actually, or virtually, so far as the adequate teaching of homœopathy is concerned. The survivors exist only because they have submitted to every demand by the old school authorities.

In "the good old days," when all that was deemed necessary for a medical education could be taught in one or two college years, homœopathy included, there was some excuse for establishing "Homœopathic Medical Colleges." Half a dozen physicians, full of zeal for the cause they had espoused, and a few thousand dollars to rent and equip a modest little building were the principal requirements. There were few laws and less red tape to hamper them. They united and went to work. And who will say they did not do good work? Who can say that the students graduated from those little colleges did not show as good results in healing the sick as the men turned out today from more pretentious institutions?

Things were much more simple then. There were not so many things to learn. Now they require five to seven years to cover the prescribed course. When they are through they know a great deal, but, as Josh Billings said, "the trouble is they know so many things that ain't so!"

We sigh as we think of it. The marvel is that any young man of today, facing seven years of bondage and the expenditure of thousands of dollars, has the courage to enter medicine. How many of us who have been in practice twenty years or more would start tomorrow?

The old school is making a carefully planned and concerted effort to conciliate us and induce us to join forces with them. Their societies are open to all legally qualified and morally respectable physicians upon one condition—already stated. Many of them regularly send notices of their meetings to homœopathic physicians and invite them to become members. Some of them are making special efforts in this direction. Many of our men have responded to the invitation and gone in with them.

This does not mean that they are trying to destroy homœopathy as a therapeutic system, nor even to destroy its legitimate institutions. It *does* mean that they are trying to destroy bigotry, intolerance and sectarianism—in *their own ranks as well as in ours*. It means that they are trying to approximate the edges of the ghastly, gaping wound which has existed so long in the medical body and heal it. It means that they realize the strength and dangerous nature of the forces which are attacking the medical profession as a whole, and are trying to mass the medical forces to meet them. It means that they realize that we, as a school, have something they lack and need, and that a combination of forces will make for scientific progress, as well as for mutual protection.

Possibly they see, or could be made to see, in a rejuvenated, modernized homœopathy, a desirable tenant for the pharmaco-therapeutic college apartment vacated by its former allopathic occupant.

It is a fine, large apartment and the rent is reasonable. Why not meet them half way, sign the lease and move in. I will not say this has been forced upon us, but rather, that *it is the natural result of evolution*. This, gentlemen, as I see it, is THE FUTURE OF HOMŒOPATHY.

THE REMOVAL OF BILE AND BLOOD FROM THE URINE.—The thalein test of renal function is made difficult when bile and blood are in the urine. Burwell and Jones suggest that the difficulties be overcome by treating the offending urine as follows: "The specimen of urine is diluted up to 500 c.c. with tap water. To 20 c.c. of this diluted urine are added 20 c.c. of a saturated alcoholic solution of zinc acetate, which precipitates out bilirubin and hemoglobin. Red cells are carried down with the precipitate. Filtration yields a clear solution, now free of bile pigments and hemoglobin. Twenty cubic centimeters of this clear filtrate is made alkaline with 5 c.c. of saturated sodium hydroxid solution to bring out the full color of the dye, and made up to 40 c.c. with tap water. This solution is clear and is read directly against a known standard solution of phenolsulphonephthalein. In order to correct for dilution, the percentage reading is multiplied by 2." Investigators have demonstrated that this method does not destroy any of the thalein in the urine, and that it removes the bile and hemoglobin, so that neither responded to technical tests for their presence. Their suggestion therefore, appears to be a valuable one.—*Journal American Medical Association*, August 6th, 1921.

SURGICAL TUBERCULOSIS

A SYMPOSIUM PRESENTED TO THE HOMOEOPATHIC MEDICAL
SOCIETY OF GERMANTOWN, DEC. 20, 1920.

PATHOLOGY

BY

WM. M. SYLVIS, M.D., PHILADELPHIA

TUBERCULOSIS, an infectious disease, of universal distribution, one of the most widespread of maladies, all forms of which were demonstrated before the discovery by Koch, in 1882, of the exciting cause, the *Bacillus Tuberculosis*.

Usually occurs as sub-acute or chronic, but may in an acute form cause death in two to three weeks.

Heredity is evidenced by a predisposition or susceptibility, while the weight of evidence opposes direct transmission.

Tubercle bacilli may enter an abrasion by direct exposure to infectious material, but the two great portals of entry are clearly the respiratory and intestinal tracts.

The miliary tubercle is the characteristic lesion. On reaching the tissue the bacteria rapidly multiply and are disseminated into the surrounding tissue partly by growth and partly by the lymph currents. They become surrounded by a layer of leucocytes, endothelium of the capillaries, and from them, rounded, cuboidal or polygonal bodies with vesicular nuclei (the epithelioid cells) so-called because of their arrangement. Surrounding them the lymphocytes and perhaps a few eosinophiles.

In some, but not all tubercles, giant cells are formed by an increase in the protoplasm and in the nuclei of an individual cell, or possibly by the fusion of several cells, the nuclei being located at the poles or near the periphery.

If serum is present it forms a reticulum of fibres which is most apparent, as a rule, at the margin of the tubercle.

The blood vessels and lymph spaces become occluded by endothelial cells, nutrition is cut off, and causes necrosis which begins at the center. Bacteria may be carried to the periphery of the tubercle and the process spread by continuity, or the tubercles may enlarge by amalgamation with others.

The fixed connective tissue cells, including the endothe-

lium proliferate and attempt to wall off the lesion by a process of fibrosis.

Microscopically these tubercles appear as minute to larger gray or yellow nodules. On section their centers show characteristic yellow foci of caseation.

TUBERCULOUS ABSCESS.—If the caseous material undergoes liquefaction an abscess forms which may become progressively larger, containing "*curdy pus*," which is not true pus, but a thin to moderately thick fluid in which are numerous small sloughs and fibrinous particles.

This liquefaction may be due to a secondary pyogenic infection.

Lining this abscess is a membrane made up of newly formed granulation and fibrous tissue, "*the pyophylactic membrane*." The contents of the abscess early become sterile but the membrane contains numerous bacteria and miliary tubercles. The infection spreads in this manner and if it perforates into a large vessel or lymphatic space pouring great numbers of the bacilli into the circulating blood or lymph, acute miliary tuberculosis may develop. The tuberculous abscess may remain stationary for a considerable time and then under irritation become active, or the pus may be absorbed and the cavity filled with fibrous or calcareous material, producing a cure. These abscesses show a marked tendency to travel and may appear at long distances from the primary focus.

Secondary infection with pyogenic bacteria may take place through the circulation, as the result of faulty technique or incomplete operation, or when the abscess approaches the surface or evacuates itself spontaneously.

A dangerous septicemia may follow if drainage is poor and vital resistance low, or amyloid degeneration may develop with long continued discharge with a fatal termination.

Reaction of connective tissue may give rise to distinct tumors (granuloma tuberculoma) made up of grayish or yellow granulation tissue with a very poor blood supply. Scattered through this granulation tissue are miliary tubercles, but the characteristic feature of this form is the small amount of caseation. Met most commonly in lymph nodes of neck, in cecum and in brain.

Apart from the acute miliary form, the same general characters are maintained regardless of the organ involved and because tuberculosis is commonly a localized affection it

may and will be discussed in the following papers according to the situation of the lesion.

TUBERCULOSIS OF THE LYMPHATIC SYSTEM

BY

H. L. NORTHROP, M.D., F.A.C.S., PHILADELPHIA

ANATOMY. The lymphatics comprise an extensive part of the blood-vascular system, consisting of a series of thin-walled vessels, many of them of microscopic delicacy and beginning in the innumerable fascial clefts found throughout the body, and in the larger lymph spaces or cavities. These lymph vessels, while communicating freely among themselves are, nevertheless, rather consistently arranged in two sets, superficial and deep. The former drains the skin and superficial fascia; the latter the deep tissues and lymph cavities. The lymphatics situated within the mesentery have received the name of lacteals, because of their milk-like appearance during the absorption of chyle.

Associated with the lymph vessels are the lymph nodes, or glands to and from which the lymph vessels pass as afferents and efferents. There are about 700 lymphatic glands in the body, varying in size from that of a pin head to that of a small almond. These glands are arranged in groups, the principal ones being found in the cervical, axillary, inguinal and femoral regions, in the chest around the bronchi, and in the abdomen and pelvis, between the two layers of the mesentery and closely related to the bloodvessels and viscera. The lowest gland in the upper extremity is the epicondylar, above the inner condyle of the humerus; in the lower extremity the lowest gland is in the popliteal space. There are no nodes within the cranial cavity.

PHYSIOLOGY. This is summed up in the synonym applied to the lymphatic system, viz., absorbents, and in the nickname attached to the glands, viz., "catch basins." Etymologically the word lymphatic means "lymph bearing." The "lymph-bearing" vessels converge from all the peripheral parts of the body to the thoracic duct and the right lymphatic duct, which terminate at the base of the neck on the left and right side

respectively, at the point of confluence of the internal jugular and subclavian veins.

Tuberculosis of the lymphatic system is confined to the lymph nodes and is known by the name of adenitis, or lymphadenitis, the adjectives cervical (comprising superficial cervical, deep cervical, submaxillary, submental, or post-cervical, according to location), axillary, bronchial, inguinal, or mesenteric, being used to designate the exact group involved. More than one group of nodes may be simultaneously affected. Scrofula is an antiquated term formerly applied to this disease, and was used largely by the laity and advertisers of proprietary nostrums.

Lymphadenitis is found mostly in children and youth, the cervical group of glands being most frequently involved. The infection enters through the tonsils, or from diseased teeth or catarrhal processes of the mucous membrane of the nose, mouth or pharynx. By one or several of these avenues the tubercle bacilli (the *causa vera*) invade the adenoid tissue and set up an inflammatory condition which in many cases subsequently results in caseation and suppuration, and occasionally in calcification. At first the infected nodes are separated from each other and move freely and independently in the surrounding tissues. As repeated, acute exacerbations are added to the chronic inflammation, periadenitis develops and the individual nodes of the group become glued to each other and to adjacent structures. If suppuration occurs the skin becomes discolored and adherent to the underlying inflammatory mass. The wound, or fistula, left by the bursting of a glandular abscess, is apt to have undermined edges and to be filled with exuberant granulations. The resulting scar is decidedly unsightly.

TREATMENT. Iodin, locally, and some form of iodide, internally, constitute the most popular forms of medical treatment, but their value is greatly overestimated, and their use should not be insisted upon unless the adenitis shows appreciable improvement.

Perhaps the most important thing to do early is to remove diseased tonsils and teeth, or any other condition which may be thought responsible for the infection.

The practice of not operating, *i. e.*, enucleating the diseased glands by clean dissection, but waiting for and encouraging suppuration, then treating the condition by simple in-

cision, or lancing, is open to criticism and is but a makeshift. Portions of the diseased nodes are necessarily left behind and the wound heals slowly, or not at all. So also should the method recommended by Calot, that of aspirating the pus and then injecting an anti-tubercular solution, be discarded as unsatisfactory. I have tried it several times, but cannot recommend it. In fact, open operation (and early operation) is *the* method of treatment par excellence. By operating before supuration has broken the gland down completely, burst through its capsule and set up periadenitis, a more complete, cleaner job can be done through a properly placed incision with much better cosmetic effect than when the glands and tissues become matted together.

The radical operation is a very simple affair if only one or two glands are diseased, are superficially placed and are not broken down; or it becomes one of the major operations in surgery if the superficial chain along the line of the external jugular and the deep chain of glands along the course of the internal jugular veins are the seat of the tubercular infection. Then an incision extending from mastoid to clavicle and perhaps curving outward above the clavicle will be required, and the dissection necessary will tax the time, patience and skill of the operator. Earlier operation will obviate all this and, making it even more worth while, cause much less disfigurement of the patient's neck, less numbness, paresthesia, atrophy of muscles through division of nerves, etc. Therefore, as it has been truly said, thorough excision and, I may interpolate, *early* excision, "is the operation of choice." First, operation removes from the body a possible source of metastatic infection of other parts (lungs, joints, etc.); second, it accomplishes quickly and painlessly (relatively) and with a minimum scar what nature does slowly, crudely, and with ugly scarring; and, third, marked improvement in the patient's general health often follows.

Tracheo-bronchial adenitis is another form met with in children. The mediastinal lymph-glands constitute filters in which lodge various foreign particles and bacilli, among which the tubercle bacilli are very common, as attested by the frequent presence of tubercles and caseous material in the glands of this group. Northrop (New York) found them involved in every one of 127 cases of tuberculosis at the New York Foundling Hospital. The child's health fails and paroxysmal

cough develops. The X-ray negative should be studied in conjunction with a careful physical examination, in making a diagnosis. Intrathoracic complications, such as asphyxia from pressure, lung abscess, empyema and pericarditis, may occur.

Tabes mesenterica, or tuberculosis of the lymphatic glands of the mesentery, occurs with greater frequency than is usually realized. These glands, pathologically speaking, enlarge, caseate, suppurate and sometimes calcify. The subjects of this affection are usually children who are thin, wasted (tabetic), with enlarged, tympanitic abdomen, diarrhoea and night-sweats. The general wasting and debility are the most characteristic features. Sometimes tubercular peritonitis is a sequel to the adenitis and caused by it.

I have seen quite a number of cases of tabes mesenterica where the abdomen was opened for tubercular peritonitis or something else. In two cases that I recall the abdominal symptoms were so acute that a diagnosis of appendicitis had been made and was substantiated by the symptoms. But the appendix was macroscopically without pathology. The entire finding was enlarged, inflamed and suppurating mesenteric glands, and no other lesion, establishing the correct diagnosis tabes mesenterica.

SURGICAL TREATMENT OF TUBERCULOSIS OF THE LUNG AND PLEURA

BY

GUSTAVE A. VAN LENNEP, M.D., F.A.C.S.

THE surgical treatment of tuberculosis of the lung has been limited and not particularly successful. Attempts have been made to remove localized tubercular lung tissue by pneumectomy, gaining approach by means of trap door resections of the chest wall, or by resection of a rib and spreading with specially designed and powerful retractors. These operations are severe, and the mortality has been very high, so that they have very wisely been discarded.

In the case of lung abscess, or more properly speaking, tubercular cavities with mixed infection and constitutional sepsis, incision and drainage is rational under certain conditions, and has met with some very gratifying results. If the

lung at or near the involved area happens to be adherent, and usually it is, the operation can be carried out without fear of infecting the pleural sac, otherwise steps must be taken to produce adhesions by the performance of a two-step operation.

Tuffier and Loewy have produced collapse of the diseased portion of the lung, usually the apex, by what they term "Extrapleural Pneumothorax." An intercostal incision ($2\frac{1}{2}$ inches long in the second interspace within a finger's breadth of the sternum), exposes the parietal pleura, which is then very carefully detached from the ribs, widely in all directions, without opening it. Localized collapse of the lung will take place then, limited to the diseased area, and depending upon the extent of the dissection of the pleura. The resulting cavity has been filled in with transplanted masses of fat, or paraffin, or bismuth paste. In the small number of cases in which this method has been tried, there was noted improvement in the physical signs; cough disappeared, and there was neither dyspnea, hemoptysis, expectoration, nor fever.

The one surgical procedure that promises something worth while in the treatment of lung tuberculosis is the production of collapse of the lung, either partial or total, by means of an artificial pneumothorax, or some form of rib resection, as for instance Friedrich's total neuropneumolysis.

The production of artificial pneumothorax has been the most widely used and most successful. It is indicated in unilateral incipient infiltration without adhesions, in small cavities not associated with pleuritis; in all progressive cases in which the general treatment is not checking the disease, and in cases of hemoptysis, in which it is positively indicated. The procedure is useless where adhesions are present between the lung and parietal pleura, and this fact should be carefully ascertained before the method is applied. Warmed nitrogen gas is the agent used, as it is inert and less irritating than air, oxygen or carbon dioxide, and is absorbed more slowly. The average initial dose is about 50 c.c.. In cases of severe hemoptysis, as high as 200 to 400 c.c. may be required. By using the injection every two to five days, the collapse of the lung is accomplished gradually, and the dangers and discomforts of sudden dislocation of the organs of the thorax are prevented. It is said that the gas will remain in the pleural sac for from ten to twenty weeks. Usually more gas is added from time to time, at intervals of ten days to a month, the case being con-

stantly checked up by X-ray plates or fluroscopic examination. As far back as 1908, Forlanine reported 1454 cases, with one death and three minor accidents.

The apparatus for introduction of the nitrogen, and the technique of the operation have been standardized by Murphy of Chicago, and description of the same may be found in "The Surgical Clinics of John B. Murphy," December, 1913. Murphy was, himself, an enthusiastic supporter of this method, and practiced it satisfactorily for many years. In his characteristic, forcible way he pleads for the early use of artificial pneumothorax in lung tuberculosis, saying: ". . . The results in pneumothorax bear a definite relation to the degree of pathologic destruction present at the time of treatment. If the process is far advanced, the improvement must be expected to be average low. If the cases are treated early results will be proportionately better, even to an astounding degree. Why should any of the cases be late in receiving treatment in tuberculosis, in cancer, in appendicitis? Ask the doctor. Procrastination is the greatest mortality factor."—(*Gen. Surgery-Practical Medical Series*, 1914, p. 317.)

In an analysis of 1,108 cases by 24 American observers, T. B. Lachs in 1915 publishes the following results (*Journal A. M. A.*, Nov. 27, 1915):

	No.	Per Cent.	
Failure	162	14.6	} 49.1%
Unimproved	203	18.3	
Dead	180	16.2	
Improved	323	29.2	} 21.7%
Quiescent	119	10.8	
App. arrested	105	9.5	
Cured	16	1.4	
Pleural effusion	113		
Extension of process in opposite lung	58		
Bleeding of other lung	7		
Pleural shock	26		
Gas embolism	3		
Spontaneous pneumo- thorax	10		
Bilateral pneumothorax	2		

Pyopneumothorax	13
Cardiac dilation and heart failure	4
Torsion of heart and blood vessels	1

SUMMARY

The surgical treatment of tuberculosis of the lungs and pleura is at the present time:

1. Pneumonectomy (pulmonary apex) wisely abandoned.
2. Pneumotomy, of limited value, and in advanced cases.
3. Thoracoplasty. Friedrick's & Brauer's extensive resections appear to be abandoned on account of shock. Wilm's columnar resection of the ribs is preferable.
4. Tuffier's & Loewy's etrapleural pneumothorax with or without plugging of the cavity with fat or paste.
5. Artificial pneumothorax with nitrogen gas, promises better results than any of the preceding methods, but must be used early in the course of the disease to affect a cure.
6. Oxygen replacement, after aspiration, for chronic tuberculous pyopneumothorax.

SURGICAL TUBERCULOSIS OF THE GENITO-URINARY TRACT.

BY

WILLIAM C. HUNSICKER, M.D., F.A.C.S.

As a part of a symposium such as is being presented before this Society, very little time should be devoted to the discussion of whether tubercular infections of the genito-urinary tract are primary or secondary, or whether they are ascending or descending, important as these questions are. The time should be devoted to the more important questions of diagnosis and treatment. We should consider, however, that tuberculosis is a chronic systemic disease and, while active lesions are present in some particular organ or tract and none can be demonstrated elsewhere, that does not preclude their possible latent existence; also genito-urinary surgeons recognize the

fact that the removal or treatment of the primary and more active tubercular process often cures the subsequent lesser one.

Genito-urinary tuberculosis has its beginning usually in either the extreme upper or lower portion of the tract—kidney or epididymis, the former being more frequently the primary focus. How the infection reaches this location is again in dispute, whether by direct extension or through the blood or lymph stream, with the preponderance of evidence in favor of the latter. The first subjective manifestations are usually referable to the bladder with the epididymis a close second, although sudden profuse transient hematuria without subjective symptoms frequently first calls attention to a tubercular lesion in the kidney.

Tuberculosis of the sexual and urinary organs has the same age predilections as tuberculosis in general, youth and early adult life—18th to 34th year—most often appearing in the twenties. It is also true that it is more often seen in the male than in the female. Trauma and prolonged irritation play an important part in the etiology of this infection.

We are taught that a mixed infection occurs in genito-urinary tuberculosis. This is true of involvement of the lower tract but investigations by Spooner have shown conclusively that it is not true of the kidney. He shows that cultures from freshly removed tubercular kidney show a pure strain. The pathological processes developing are identical to those of tuberculosis in general and have been covered in the first paper. General miliary tuberculosis is of no surgical interest and need not be considered in this paper.

With these few introductory statements we will now take up more definitely tubercular involvement of the genito-urinary tract. For brevity and convenience the infection will be considered in two groups—the urinary, comprising the kidney, ureter, bladder and posterior urethra; and the genital, comprising the testicle, epididymis, vas, seminal vesicle and prostate. It must be remembered, however, that tubercular infection starting in one group may and very often does ultimately extend to the other.

Urinary tuberculosis, in a vast majority of the cases, has its beginning in one kidney involving by extension the ureter and a bladder area of the same side, finally extending to the opposite bladder wall, thence to the opposite kidney either through the ureter or by the lymph channels. The infection

is primarily in the parenchyma and may rupture outward forming a perinephritic abscess; or, as more often happens, it may rupture into the pelvis producing typical involvement of the entire urinary tract.

Symptomless hematuria, profuse but of short duration, is sometimes the first indication of kidney infection. This manifestation is due to rupture into the pelvis of a focus in the parenchyma and because of its transient character is considered to be of but slight importance by the patient and too often also by the attending physician. Urinary frequency associated with pain during and at the end of the act is more often the condition for which the patient seeks medical advice. If the infection is focal in the kidney, an investigation may show no microscopic pus or blood in the urine and no inflammation of the bladder mucosa except possibly for a trigonitis. Pus and blood, however, soon appear in the urine and the cystoscope shows typical ulcerations of the bladder mucosa; the urinary symptoms increase in severity with the pathological extension until ultimately the frequency and pain become intolerable. Advanced cases are often complicated by calculus in kidney or bladder.

In making a diagnosis, the family history and the past history of the patient and the presence of lesions outside of the genito-urinary tract must be taken into account with the genito-urinary manifestations; if these are negative, then the diagnosis must rest on the clinical manifestations of transient hematuria, urinary frequency and pain with or without pyuria and acid urine. It should be emphasized that the urine of tuberculosis is consistently acid irrespective of the presence or absence of pus. It should also be borne in mind that the lesions of tuberculosis of this tract are aggravated by local treatment. The X-ray is of prime importance in making the diagnosis and last, but most important, is the cystoscopic examination of the bladder with catheterization of the ureters.

The cystoscopic picture shows irregular ulcers with a greyish base, often associated with oedema of the mucosa at and about the opening of the ureter on the affected side. With mixed infection, these often coalesce involving large areas of the bladder mucosa; and in very virulent mixed infections, may involve the entire lining. The ureter lips are inflamed in early infection but later, through thickening and infiltration, become retracted resembling a golf hole in shape. If the

ulcerations are confined to one lateral segment of the bladder it is almost conclusive evidence that the infection is unilateral. The advice to catheterize the apparently normal ureter is questionable as the danger of carrying active infection with the instrument must be considered; pyelography also seems to me to be a dangerous procedure. Focal infections in the kidney structure may be demonstrated by X-ray.

The demonstration of the tubercle bacillus in the urine is confirmatory evidence. It has, however, been the experience of the writer that they cannot be found in most cases, even in clinically evident advanced infections. Moreover, their presence in the urine without clinical manifest tuberculosis does of necessity mean active infection.

Urinary tuberculosis, when unilateral, is without argument a purely surgical infection and requires surgical procedure for its removal. If it can be demonstrated that the active process is confined to one kidney, even with extensive involvement of the bladder mucosa, the removal of the diseased kidney is followed by good results, the secondary bladder infection nearly always clearing up. If both kidneys are infected, the writer believes that surgical interference is not justified, although nephrectomy on the more advanced side has been advised and nephrotomy for drainage is often performed.

The bladder should not be interfered with surgically except to palliate those desperate cases where frequency and pain are intolerable and where a suprapubic sinus is more desirable than agony. Local treatment is more often harmful than beneficial, although iodoform and guaiacol in olive oil sometimes is used with good results. The advanced infections of both kidneys and bladder are best treated hygienically and medically.

The foregoing discussion of tuberculosis of the urinary tract applies equally to both sexes. The discussion on genital tuberculosis which is to follow will be confined to a consideration of this disease in the male only.

Genital tuberculosis usually has its beginning in the epididymis, the infection starting as a nodular infiltration of the epididymis at its globus major, slow in development, not painful but tender, frequently associated with hydrocele and progressing until the entire structure is involved, often extending to the testicle proper. The process terminates in multiple caseous abscesses which sometimes unite to form one large

one. The vas becomes infiltrated and is felt as a thickened nodular cord in the scrotum above the testicle, feeling like a string of beads. Extension to the seminal vesicle is frequent with the same characteristic nodular infiltration and caseous degeneration as elsewhere.

The prostate is the bridge over which infection extends from one epididymis to the other and from bladder to urethra. As in urinary tuberculosis the infection is predominately unilateral but it may involve the opposite sexual channels in reverse order through this prostatic bridge. If the process has its beginning in the prostate, the unilateral characteristic still maintains.

The symptoms associated with genital tuberculosis are those typical of a low grade inflammation of the organ involved and are not characteristic except for the absence of pain. The only variation of this is in the case of advanced prostatic infection with rupture into the posterior urethra or bladder, when painful urination is present as in the urinary type, but here due to an ulcerative trigonitis.

In the surgical treatment of genital tuberculosis, we are facing even a less favorable prognosis and a more limited field for treatment than in the urinary type. Whenever an abscess forms, it is good surgery to open and drain. This is especially true in regard to the epididymis and testicle, but should be cautiously considered when applied to the prostate and seminal vesicle because of the danger of a permanent urinary fistula following. A marked hydrocele, if present, should be tapped but should not be operated. Radical removal of the epididymis—epididymectomy—is advised but, in the belief of the writer, it is not a good procedure. Castration should never be performed except to remove a completely destroyed testicle. It has been the experience of the writer that when the lower genital tract is whittled, the infection progresses upward and the whittling must be continued. Examinations of the prostate and seminal vesicles must be carried out with extreme gentleness and massage of these organs is absolutely contraindicated. The best therapeutic procedures for genital tuberculosis consist of the hygienic, dietetic and medicinal treatment of general tuberculosis with the drainage of local abscesses as required.

To sum up:

Genito-urinary tuberculosis is usually a part of a general infection which may be active in this tract only.

In most instances, it is primarily unilateral, ultimately bridging over to the opposite side.

It is more often very chronic in its development than rapidly progressive; although, without being miliary, its rapidity of development is sometimes remarkable.

The treatment is, in the main, expectant as in general tuberculosis, the exception being in the brilliant results obtained from the removal of a unilateral kidney infection.

TUBERCULOSIS OF THE INTESTINE AND PERITONEUM

BY

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SURGICAL treatment is only rarely indicated in tuberculosis of the stomach, intestine and peritoneum, although these diseases are very common. This is due to a number of reasons: they are ordinarily only a part of a general infection, or at least there is a more serious lesion in another part of the body; they respond very well to medical treatment; an exact diagnosis is often exceedingly difficult, and, finally, an operation is usually complicated and the prospects of a permanent cure are dubious. In spite of these drawbacks the surgeon is occasionally called upon to treat them, oftentimes when he unexpectedly meets them as a complication or when the abdomen has been opened under a mistaken diagnosis, and for this reason an accurate knowledge of them is necessary.

While intestinal tuberculosis has favorite sites of predilection and varies somewhat according to these sites, certain factors are common to all. It may originate and remain in the intestine, but the great majority of cases are secondary to, or at least accompanied by, foci in other regions, especially the lungs, pleura and bronchial lymph nodes. Roughly it may be divided into two forms, though these frequently overlap, the ulcerative and the hypertropic or hyperplastic. The former may consist of one or two large, deep ulcers or of multiple, superficial ulcerations of the mucous membrane and submucosa; the latter is an extensive but insufficient reaction of the connective tissues; again, the bacteria and ulceration and caseation

are scanty or absent. There is marked tendency to form attachments to surrounding structures and the course of the ulceration is around the circumference of the gut, so that bowel obstruction, more or less complete, gives rise to symptoms during the active stage or as a sequella.

The course is typically a chronic one and the onset is usually slow and insidious, although the history of many cases would point to a sudden development and this is particularly true when the symptoms are those of such complications as obstruction or abscess. Under these circumstances the signs of the active lesion may have disappeared years before; frequently they were present only during early childhood, so that they have either been forgotten or assume no importance in the minds of the patient or of the parents.

The presence of tuberculosis in the family is of considerable value, but too much importance should not be placed upon its absence for not infrequently such a history cannot be obtained. This also applies to the absence of a primary focus which may only be found after a very careful search, in which special importance should be placed upon the lungs, pleura, superficial lymph nodes, kidneys, and, in the male, the prostate, seminal vesicles and testes and the pelvic generative organs in the female. The most common symptoms are anorexia, intractable diarrhea, sometimes alternating with constipation, anorexia, emaciation, loss of strength and mental lethargy.

Tuberculosis of the stomach is considered a very rare manifestation, yet in one clinic Rovsing presented two cases which he had diagnosed and he later proved these diagnoses to be correct by operation and pathological findings. While these two cases do not show that ulceration from this cause is common they cannot help but make us wonder whether this condition is sometimes not wrongly attributed to a simple or a carcinomatous ulcer. The pyloric end of the stomach is the usual portion attacked and it is readily seen from the pathology that the symptoms and appearance would be that of stenosis of this outlet. In Rovsing's differential diagnosis he laid particular emphasis on the absence of true cachexia and the presence of undoubted tubercular lesions in greatly emaciated patients suffering from pyloric obstruction. In one of these cases resection of the pylorus, which would have been extremely difficult and added much to the danger of the operation, was

avoided and a cure was obtained by a gastro-enterostomy and the proper constitutional after-treatment.

The lesions in the small intestine may be in any part from the jejunum to the lower end of the ileum, and often are multiple and scattered over wide areas. They quite frequently complicate tuberculosis of other parts and in themselves rarely call for surgery. Their greatest incidence is in early childhood; they sometimes follow, or are located at the seat of trauma, such as a hernia; occasionally they set up a suppurative peritonitis from rupture and mixed infection; they often produce fistulae, usually into another loop or gut, but now and then externally or into the bladder or stomach; but the most important and characteristic surgical complication is adhesion to surrounding coils of intestine or other structures. Operation is imperatively called for with a septic peritonitis, may be indicated when a fistula has formed between the upper portion of the jejunum and the colon so that the patient is declining from inanition, but an uncomplicated external fistula should not be attacked. It is probably tortuous and surrounded by dense adhesions, so that its deep opening may not be found, the operation is severe, more damage than good may follow it, and a spontaneous closure will take place with improvement in the general condition of the patient.

The intestinal lumen may be so greatly encroached upon by the hyperplastic form as to cause obstruction which will call for relief, but this is usually necessitated by stricture following the healing of an ulcer or by contraction of external adhesions with kinking of the gut. The last two mentioned conditions do not occur during the active disease but after the lapse of a number of years, so that the age of this type of patient is ordinarily from twenty to forty. As already stated the tubercular ulcer extends around the circumference and the contracted scar causes a sharp, narrow stricture with marked dilatation above it. The course is slow, with intermittent attacks of colicky pain, anorexia, perhaps nausea and vomiting, emaciation, distension, waves of peristalsis, alternating constipation and diarrhea without blood in the stools and with the absence of a tumor. The symptoms suggest a gastric or an intestinal lesion, depending largely upon whether the trouble is high up or low down. While they are not positive in character a careful history may add much evidence by showing that the patient was once a sufferer from a long drawn-out,

intractable diarrhea. Thorough examination should eliminate disease of the stomach, and the age of the patient and absence of blood and shreds in the stool would point from carcinoma.

A number of instances of sudden perforation in the thinned-out intestine above such a stricture have been reported, and we met such a case in the wards of Hahnemann Hospital a number of years ago. A diagnosis of appendicitis was made but when the abdomen was opened the appendix was found intact although the peritoneal cavity was full of pus. Three very narrow strictures with greatly distended segments of gut between them were discovered high up in the jejunum, and there was an opening through which the intestinal contents were emptying themselves about an inch above the lowest. The perforation was closed and the patient did well for about two weeks but finally died of septic peritonitis. Although the temperature had fallen to normal and the patient appeared to be well on the road to recovery until he collapsed within twenty-four hours after death, autopsy showed the entire peritoneal cavity, with the exception of the lateral gutter which had been drained, to be full of stinking pus, and we concluded from the lack of symptoms that absorption through the thickened, fibrous peritoneum must have been greatly retarded.

While a history of previous intestinal disturbance may be present with obstruction from adhesions, the onset is very likely to be sudden, the closure complete and early death ensue unless prompt relief is given. The symptoms are those common to any stenosis, although distention and active peristalsis are likely to be limited from the massive adhesions. We met such a case about a year ago, which had developed while the patient was suffering from an attack of influenza with a temperature of about 105 degrees. His condition was almost hopeless before operation and he succumbed shortly after. A band beneath the left rectus had contracted so tightly as to completely cut off the fecal current, but there were so many narrowings and kinks of the intestine that more obstructions could easily have been present without having been recognized.

The treatment, of course, is to relieve the obstruction, but under the circumstances this may not be easily accomplished. Strictures are usually multiple, as many as eleven have been recorded, so that the correct operation is not easily decided

upon. Excision is best if too much intestine does not have to be sacrificed, otherwise an entero-enterostomy may suffice, or a combination of these two methods may be preferable. Entroplasty has been done but should be avoided if possible, for the results have not been favorable and recurrence has usually followed. With obstruction from peritoneal bands it is often difficult to locate and free the exact lesion for the greatest care and gentleness must be used in breaking up the dense adhesions, otherwise the gut will be torn with a resulting fecal fistula. The same types of operation already mentioned are indicated, for the small intestine is affected and an external enterostomy will lead to death from starvation and exhaustion.

In the large intestine by far the greatest number of patients are affected at or near the ileo-cecal junction and here the disease is more largely surgical than at any other point. With multiple, superficial ulcers the symptoms are similar to those of the small intestine, but the majority of cases result in a marked hyperplasia of the muscular and submucous coats with consequent obstruction. There may be one or several large, deep ulcers, or the mucous membrane may be intact, and the cecum usually becomes attached to the neighboring tissues and may be buried in a fibrous, fatty mass which extends as far as the mid-line. The diagnosis usually rests between carcinoma and tuberculosis, although mistakes have occurred with many other conditions; for instance, hydronephrosis, movable kidney and ovarian tumor. The age is again usually from twenty to forty years, the symptoms those of a progressive bowel obstruction with intermittent constipation and diarrhea, frequently with blood and mucus in the stools, and a firm, usually irregular, slightly movable tumor in the right side of the abdomen. It is well to bear in mind that on account of retraction of the mesentery the cecum may be raised several inches above its normal position.

Operation is always called for at as early a stage as it is recognized, as excision is the operation of choice and this may be made impossible by extension to outside structures. Even when the abdomen has been opened it may be difficult to make a differentiation from carcinoma, but an examination of the enlarged lymph nodes or ulceration of the neighboring ileum may help to clear up the diagnosis. If extirpation is impossi-

ble the bowel should be short-circuited; this will afford temporary relief and may lead to permanent cure.

Primary tuberculosis of the peritoneum is rare, though it is frequently secondary to ulceration of the intestine, to lesions of the lung, the pleura and in the female, the fallopian tubes. Three forms are usually described: (a) ascitic, (b) fibro-plastic, and (c) caseous, but all three are really different phases of the same condition and are often combined. In all there are miliary tubercles scattered over the entire peritoneum or localized in one or more areas, with these the peritoneum becomes thickened, friable and there is an exudation of fluid, from a slight moisture to a very large quantity. As the disease progresses adhesions form and bind the coils of intestine firmly together with the formation of pockets or cavities, so that the serous exudate may be free or confined to a number of spaces. With progression some of this newly-formed tissue may caseate and finally lead to the formation of cold abscesses which may rupture into the neighboring or distant intestine, into such organs as the bladder or stomach or externally, then usually at the umbilicus or on the right side of the abdomen. If secondary infection occurs a serious septicemia may be set up and if the opening extends into the bowel as well as externally or into another organ a troublesome or dangerous fistula will be the outcome.

The early symptoms of a peritonitis, *per se*, are few as has been shown by many of us when we have opened an abdomen for some other lesion and found a well-developed, unsuspected peritonitis present. Most of the symptoms attributed to the ascitic form are really those of ulceration or obstruction of the bowel and have already been described. Later there is distention from fluid or gas or both, the fluid is free or encysted, clear, straw-colored or tinged with blood and occasionally pressure upon the venacava causes enlarged veins, lividity and a doughy feel of the skin. With adhesions the characteristic symptoms are the indefinite pains, constipation, vomiting, etc., of obstruction, and when the pelvis is involved its organs, the bladder, may give rise to special signs, painful micturition having been present in seventeen out of twenty such cases reported by Kelly.

The diagnosis is based upon a general survey of the disease and the history, by finding the original focus and by exclusion of such diseases as cirrhosis of the liver, gastro-in-

testinal lesions and malignancy, something which is not always possible to do.

Many times the disease rapidly disappears under appropriate treatment, but when it is well developed the prognosis is based upon the general condition of the patient, the chances of curing the primary focus, the extent of the complications and the absence of extensive ulceration of the bowel and of a high temperature.

Much discussion centers around the advisability and efficacy of the operative treatment. Undoubtedly many cases are cured by rest, diet and medication, but, on the other hand, rapid cures have too frequently followed simple opening of the abdomen to be denied, even though no satisfactory explanation for them has so far been offered. With our present knowledge the proper course appears to be to attempt a cure by medicine and hygiene, and if favorable results are not apparent within a short time a laparotomy is indicated, which should be made in the mid-line in the female and on the right side in the male. This operation offers a cure in 30 per cent. of the cases and a primary focus may be discovered and corrected. Certainly no ill effects will result if the operator will bear in mind that discretion is often the better part of valor and does not attempt to break up dense adhesions in a search for a possible deeper lesion.

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FATAL LETHARGIC ENCEPHALITIS WITH BILATERAL PAROTID SWELLING.

—Babonneix and Hubac record a fatal case of encephalitis in a man aged 45, accompanied by a bilateral parotid swelling. According to Netter, who first described this complication, it is frequently accompanied by sialorrhoea, and may be replaced by a swelling of the submaxillary glands. In such cases, and even in those where involvement of the salivary glands is not manifested by any symptoms, there are always important lesions in the glandular parenchyma and often signs of excessive function. Lethargic encephalitis may in this respect be compared with rabies. The practical conclusion to be drawn from this is, they suggest, that as the virus of the disease is probably eliminated by the saliva, jaborandi or a similar product should be given to stimulate the salivary secretion. The writers allude to a recent paper by Lesne and Langle, in which they stated they had seen 10 cases of lethargic encephalitis complicated by swelling of the parotids.—*Bull. et Mem. Soc. Med. des Hop. de Paris*, May 26th, 1921.

INDICATIONS FOR OPERATION IN GENERAL PERITONITIS

BY

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(Read before the Medical and Surgical Staff of the Massachusetts Homeopathic Hospital, November 10th, 1920.)

LET us consider general peritonitis to include all peritonitis, because if I am to confine this paper to general peritonitis strictly, surgical procedure would not have any place in the treatment except for the ligating of vessels for transfusion, because in general peritonitis we have very often the absorption of the toxins or bacterial poisons before anything has taken place in the peritoneum.

Peritonitis or inflammation of the peritoneum is always a secondary disease, caused by bacteria, excepting in those undiagnosable cases of cold peritonitis, such as was once taught years ago. Among the most common offenders are streptococcus, staphylococcus, bacillus coli, pneumococcus, bacillus pyocyaneus, tubercle bacillus and the gonococcus. These bacteria may reach the peritoneal cavity in many ways, such as an abdominal wound, foreign bodies, perforation of any abdominal organ, intestines, appendix or tubes; strangulation of the bowel, volvulus, intussusception, each of which may cause gangrene, which in turn, is rapidly succeeded by a peritonitis due to the absorption of the sloughing toxic material.

The peritoneum is a large lumph sac and for convenience is surgically divided into the diaphragmatic intestinal and pelvic peritoneal cavities. The peritoneum is rich in lymphatics. The greatest number being located in the diaphragmatic cavity or upper peritoneal cavity, there being less in the intestinal and still less in the pelvis. Absorption takes place most rapidly from this region, thus making an inflammation in this locality fatal. Absorption is also rapid from the intestinal region, but not quite so rapid as from the diaphragmatic. Absorption takes place slowly from the pelvic peritoneum, making the peritonitis in this region less dangerous than one in the intestinal peritoneum and vastly less dangerous than is the disease in the diaphragmatic.

Once the bacteria gain entrance to the abdominal cavity an inflammatory process is started, the bacteria rapidly spread-

ing through the peritoneal cavity. This inflammatory process, or nature's great process of repair, call it what you will, is going on throughout the whole peritoneal cavity. Coagulation necrosis or fibrinous inflammation may result, which in turn, tends to seal up all the lymph channels, thereby walling off the process, thus hindering the absorption of toxins. This is a walled off peritonitis or peritoneal abscess.

But very often nature is not so successful, and the inflammatory mass does not coagulate, but instead necrosis and solution of the exudate and involved tissues occurs, producing pus. In very virulent streptococcus infections there may be no coagulated material at all, but instead, a suppurative inflammation starts at once, thereby causing a quick absorption of the toxins, which, if not attended to, is quickly followed by death.

It is the suppurative inflammatory process that we most fear, because it is this part of the fight which so captivates the intestines, thereby making them more absorptive by the paralyzing of their serous and muscular coats, thus hindering peristalsis, and causing them to become distended with gas, which in turn is followed by obstruction, ending often by perforation.

It is in this form that the lymphatic channels are not sealed, thereby affording an excellent opportunity for the bacteria and their toxins to travel unhindered to the blood.

It is this form of inflammation that so cripples the omentum by simply knocking it down while it is in the act of protecting the abdominal viscera. Its cells are increased in number and size, thus causing a thickening and in turn a paralysis. It is this thickened omentum one often feels through the abdominal wall and very often the first structure met in an operation after penetrating the peritoneum. It has been said that the hypertrophic omentum in such cases has decreased in size almost immediately upon the draining of such an abdomen; at least, it is not palpable after 24 hours.

As this suppurative process goes higher the diaphragmatic area becomes involved, which is rarely involved primarily. Extension being either intra or extra-peritoneal, or by direct extension or by way of the lymph channels. It is claimed that in most cases due to appendicitis and salpingitis, the infection extends by cellular tissue directly upward from the pelvic or lower peritoneal fossae.

As I have said, diaphragmatic peritonitis, or subphrenic

abscess is rare. At least it is rare among the cases operated, but on the other hand it is quite a common finding at the autopsy table. Among those found at operation or autopsy there is usually a history of a previous operation—sometime past; *i. e.*, an appendix or pus tube, and if the records are consulted it will be found that after the abdominal incision had healed, and previous to the patient's discharge from the hospital, that the patient had experienced pain in the region of the incision, probably had a rise in temperature, and, therefore, had to remain in the hospital a few days longer than he would have, had he not presented these symptoms. Upon examination a hardness was felt near the old incision, the patient was treated expectantly and in a few days the symptoms cleared up and the patient was discharged only to return at some later time with pain and symptoms of a subphrenic abscess.

An example of such a case is Mrs. A., operated for right salpingitis and appendicitis, the abdomen was closed, not drained and the incision healed perfectly within ten days; but before leaving the hospital the patient complained of pain in the region of the operation, and upon examination, an induration to the right of the incision was found. Patient also had headache, and a temperature of 100 degrees. She was treated palliatively. The condition cleared up in two days and in two days more was discharged as recovered. About seven months later the patient returned to the hospital with intense pain in the right upper abdomen, fever of 102 degrees, rapid and painful respiration and a high pulse. She had a cough also and a lagging of the right chest. She was not jaundiced but the abdomen was tender especially so over the region of the gall bladder. The abdomen was also rigid and distended. Gall bladder disease was eliminated because of the constant pain, pain not transmitted to the shoulder blade, no Boaz tenderness, which is elicited by pressure made over the 10th, 11th and 12th right thoracic vertebrae. There was no history of chill or nausea and the sputum was negative. A diagnosis of subphrenic abscess was made upon the history of the case, X-ray findings, and exploratory incision, which clinched the diagnosis. The patient was operated and it was found that she had a right subphrenic abscess.

The point I wish to make is, if the condition, when the patient presented the symptoms of pain, temperature and the

presence of a mass two days after recovery from the first operation, had been recognized and treated by opening the abdomen and draining, there is no doubt in my mind that this latter condition would not have happened.

Since the title of this paper is "Indications for Operation in General Peritonitis," then what should we do in peritonitis? In the first place, it seems to me that the very point is, has the patient peritonitis? In order to diagnose peritonitis, we must take in consideration the history of the patient, laboratory findings and physical examination. Of the most important to me, it seems, that a trained physician's senses are more important than either the history or laboratory findings, not that I belittle either, but I believe our histories are often times obscure, as we get them from the patients. Also while our laboratory findings should be most invaluable, yet are we sufficiently trained to interpret them. Again are we sufficiently trained to make a satisfactory examination of the findings? We know we need all these things. We would not think of treating a case without a history of some kind, proving to ourselves that it is invaluable. While the senses of a trained man, whose experiences have taught him to watch the patient's actions and symptoms, such as temperature, pulse, respiration and rigidity, etc., for which he must answer in his own mind the cause. Why does the patient have the temperature, pulse, respirations, etc.? Given these symptoms plus a rigid abdomen, what can this patient have? Perhaps peritonitis. Are we sure it is peritonitis?

We have seen during the epidemic of influenza of 1918 patients presenting rapid pulse, high temperature, rigid abdomen and some vomiting, chest findings negative. On these symptoms, patients have been operated, mostly for appendicitis, and after entering the abdomen, found the organ normal. The real condition being one of the chest. What are we to do in such cases? Are we to let them go unoperated? It may be the chest or the abdomen. I say, such cases should be investigated under local anaesthesia if we are in doubt, otherwise leave alone. The average case is not just as described *but* is a true peritoneal condition.

Shall we wait and hope that nature will take care of it, or shall we give the patient a greater chance by going in? Some surgeons prefer to wait and hope, leaving the burden to nature and after ordering ice bags, hot compresses, and mor-

phia to make the patient comfortable, heave a sigh of relief and leave the bed. Other surgeons say operate and operate as soon as possible, as rapidly as possible and as gently as possible. To my mind, this latter decision is more sensible, more courageous and more sympathetic for the patient. To decide this, it is not hard, for the decision hinges on which method has the greater element of danger for the patient. If we wait and allow nature to do the job, we may avoid an operation for the patient, but what guaranty have we that nature is working along that direction? If we do not wait, what harm may we do the patient? May we hasten his end by interference? It seems to me, after watching a number of cases in this institution and others, that the greater element of safety for the average case is by surgical interference unquestionably.

I have tried to reason in my own mind just why some of these cases were not operated. It may be because of my so limited experience with disease, or may be due to the lack of gray matter, or both, yet, notwithstanding the realization of the two above excuses or facts, I fail to comprehend. In the first place, let us summarize the benefits obtained from non-operative measures: poultices, hot compresses, ice bags and the like, give only relief of pain, except probably for a very slight influence on the attraction of pus to a local point. Because after the patient has died, it has been found that the bacteria are still very much alive and kicking. You prove this in your occasional infections of fingers, etc., at autopsy.

What good is morphia? Only as a reliever of pain and a genuine massacre of symptoms. It is a specific analgesic to the central nervous system. It depresses the entire C. N. S., depresses the respiratory centre, and it is constipating. No effect, whatsoever, on the cure of this disease. You see, with the exception of relieving pain and post-operative splinting of the intestines, it is of no value.

The surgeons of the non-operative belief tell us that operating hastens the death of the patient because of the shock from operation. How much shock is there? Of course, we could make it shocking in many ways. Is there any more shock to opening the abdomen once and draining it, than there is to two or three subpectoral hypodermoclyses? No, of course not. Then why this excuse? Again they tell us that operating causes a quicker dissemination of the poisons

throughout the peritoneal cavity. This is not true in the hands of a skilful operator, because the only dissemination of the poisons is to the exterior.

Gentlemen, is it not true that disease cannot be cured without first removing the cause? Does this not apply to peritonitis? Certainly it does, and the only way of getting at the cause is by surgical interference. Yet, some surgeons say keep the patient quiet, give plenty of fresh air, force fluids unless vomiting, and then restrict fluids and feed per rectum, and watch the patient. Watch for what, the localizing of pus? Surely that cannot be, because how many surgeons can tell when the pus has localized? In 75 per cent. of cases watched for the localizing of pus, the patient has died before the process has become walled off.

I will concede one point and that is that the non-operative treatment, no doubt, lowers the operative mortality, but that it lessens the number of deaths from peritonitis, remains to be seen.

If I may, analogies are in order. You all have your watch cleaned every six months or so. You have your diamond rings treated before the stone falls out, do you not? Certainly you do. You wouldn't think of waiting until it fell out. In cases of felon, etc., you do not wait until you have a large tumor filled with pus. No. You advocate early incision and drainage, so as to prevent absorption and spreading of the toxins. Well, for the very same reasons, surgical interference should be the first measure carried out in general peritonitis.

Why wait for the pus to concentrate and perhaps subject the patient to greater danger, should nature not wall off the pus? Why not aid her in this undertaking by incising and draining the abdomen, thus aiding nature by making a non-resistant point to which the pus can flow, since everything travels in the course of the least resistance? The growth of bacteria is not benefited by the operation, or by the entrance of air. But on the contrary, their growth is retarded since the tissues below par are stimulated to repair by air. Coagulation of the exudate takes place more readily in air, thereby insuring the sealing of the lymph channels and thereby preventing an absorption of toxins. The question comes up what cases shall we let alone and allow nature to work. To my mind, there is no case of general peritonitis, unless the patient is dead or nearly so, that should be allowed to wait, and even

those cases that seem moribund, should be given the chance, even though the surgeon will suffer a death to his record. We know the patient will die if not operated.

It seems to me a great many surgeons when called to consider a patient with peritonitis, often times instead of considering the patient, they are considering their own records and are not acting in favor of the patient, but rather do they assume an attitude of self-protection by saying this patient will die anyhow, and upon the strength of this assertion, allow the patient to go to heaven or ———, much like the Chinese without a solution of the continuity of their skin, so why operate and hasten his end?

What difference does it make to a moribund patient whether his life is prolonged several hours by not operating, or he is denied those several hours of miserable existence, through the questionable kindness of the surgeon who does not refuse diplomatically to take a chance and perhaps give the patient a greater opportunity for life.

Extreme doubtful cases may be let alone. Cases of local pelvic peritonitis may be let alone, but as I have previously said, when are we absolutely sure that they are walled off or localized? In my mind we are never absolutely sure. Such cases that we consider localized are perhaps not true peritonitis cases, and, of course, there should be no consideration of operation anyhow.

When a case reaches a point beyond doubt of peritonitis, in such cases, the indications for operation are positive.

I will conclude in the briefest kind of a summary that all cases of peritonitis, whether seen early or late, excepting those that are moribund, and even these cases should be operated, and quoting a well-known author and surgeon, "Prompt operation is the only hope in genuine post-operative peritonitis, and any delay means certain death." In a perforative case immediate operation is imperative.

RENAL IRRITATION IN MAN FROM HIGH PROTEIN DIET.—Squire and Newburgh have made experiments proving that forced high protein feeding in the subjects of renal disease is deleterious, as shown by the appearance of red blood cells in the urine and in the appearance of albuminuria, or an increase of albuminuria where it had already existed. Even in normal men it was demonstrated that forced high protein feeding invariably resulted in the appearance of red blood cells in the urine. So far as blood pressure is concerned the forced protein feeding had no influence when conducted for a short time.—*Archives of Internal Medicine*, July 15th, 1921.

EDITORIAL

THE INSTITUTE FEDERATION

WE have on several occasions expressed our opinion concerning the inactivity of the members of the Institute in coming to some definite conclusion concerning the organization of the Institute and its tributary State Societies into a harmonious or co-ordinating body. The matter has been going on now for a period of some seven or eight years without proceeding any further than the acceptance of the principle of federation, the value of which nobody ever denied, by the different State Societies, delay having been in great part due to too much attention to technical parliamentary details on the one hand, and the lack of definite information on the other.

We are very glad to state that at the Washington meeting of the Institute something definite was accomplished in this respect, that something being of such a nature as to go a long way toward increasing the confidence of the profession in the principles of a federated control. Heretofore business sessions of the Institute have been held before the body at large, with members careless or derelict with regard to promptness, and debate on the part of individuals who knew very little about the subject concerning which they were *trying* to say something. Very often these meetings went over the hour assigned, and encroached upon the scientific work of the session, much to the disadvantage of the latter, and necessarily to the dissatisfaction of members who attended meetings in order to improve their scientific knowledge.

Under the new rules a Congress of States, which is the official representative of the federating bodies, is composed of one or more delegates from each State Society, the number of delegates permitted varying according to the size of the society. Virtually this representation amounts to one representative in the Congress for each two hundred members of a society, no society, however, sending more than three delegates. Pennsylvania, New York, Ohio, Illinois and possibly California and Massachusetts will thus be entitled to three dele-

gates each; while smaller States, with membership of less than two hundred will have but one representative.

It is furthermore decided that hereafter the entire executive and business policies of the Institute will be conducted by the Congress, the election of officers, alone, being left to the membership at large.

Needless to say we are delighted at the consummation of the above arrangement. It means, providing the various State Societies do their duty, and feel the responsibility placed upon them in the selection of delegates, that the Congress of States will be controlled in its deliberations by men who are well acquainted with parliamentary proceedings, who know full well the needs of the Institute and of their tributary State organizations. This naturally means better work, it means more time for considering important questions, and quicker and more positive conclusions, which doubtless will be satisfactory to all.

Of the forty-eight States in the Union but thirty-four are represented by State Societies; exactly how this deficiency can be overcome is very hard to say. Virtually all of the delinquent States have less than twenty-five physicians each within their borders, and one or two of them as few as four. The Southern States appear to be very unfortunate in this respect, notwithstanding the density of their population. These, however, are very well taken care of by our Southern Association, which as an organization probably stands second to none as to the excellent management and interest of its proceedings among our societies. When it comes to States like Utah, Nevada, Arizona and Wyoming, the organization of a State Society within their borders for the present looks to be almost hopeless; still we once said this of Texas, and Texas is now very much on the map.

THE WELFARE FEDERATION OF PHILADELPHIA

THOSE interested in charitable organizations have always felt the imposition forced upon them by the numerous overhead costs of raising funds for their favorite charities, as well as the importance of obtaining the interest of a larger body of the public in charities in general. It has long been deplored that when it became necessary to obtain a large sum of money for a given charity for a definite purpose, that the paid work-

ers absorbed a very large proportion of the contributions, so that in the end the charity itself received not more than 60 to 80 per cent. of the money contributed. Furthermore, it has been a matter of regret that probably not more than 5 per cent. of the public contributes anything whatever to the enormous sums given in charity year after year. Thus it has happened that the same people give over and over again until it hurts; but being true givers they complain little, or not at all.

To overcome these evils, to reduce overhead expenses to a minimum, to enlist the working capacity of the charitable public, and to increase its efficiency, there has been organized in Philadelphia a Welfare Federation, which will be supported by the Federated Charities of Philadelphia, meaning virtually, that every charitable institution of the city will participate. The idea is that everybody is capable of giving something some time each year, and accordingly everybody should be induced to give according to his ability, no matter how small that sum may be. The old guard, the ever charitable 5 per cent., will give as it has always given, and will contribute through the Federation. The remaining 95 per cent. will be awakened from its lethargy to healthy activity.

The sums received are to be divided among the different charities, according to a method to be determined when organization is completed; but each donor has the privilege of specifying the institution to which his money will go. There will be a drive for this Federation some time in the Fall of the year. It is expected that the "Charity Week" will put an end to all these various activities which are an annoyance to the charitable, and which contribute comparatively little to the physical welfare of the wards of the various charitable organizations. The idea of the Welfare Federation is a good one to us. We have not been a large contributor to charity, but we have contributed to many often in small amounts each year; it looks nothing at the time, and we fear very much that if we knew the results of our giving, that it resulted in comparatively nothing. Under the new plan we can give more generously and but once annually, and we can relieve ourselves of the annoyance caused by the importunities of individuals who have pet charities of their own, or who are anxious to organize new ones.

THE PHYSICIAN IN POLITICS

PHYSICIANS generally have been severely criticised, because of a so-called lack of interest in political affairs. It is assumed, by reason of education, intelligence, and the broadness of view that is developed through intimate contact with many people, they should become a power in favor of good government. Unquestionably, all of this is true. It is one thing, however, to consider theories as to what should exist, and the unfortunate results that may ensue if the physician becomes an active politician.

Physicians are trained to look after the sick; illness occurs at most unexpected times and places, and under unusual circumstances. If, therefore, a physician is to be a successful practitioner, he must be ever ready on the job. This quite naturally makes politics as an amusement or occupation impossible. Of course, we are speaking of such political activities as take a physician away from his home and office, and cause him to neglect practice. We do not refer to an active and healthful interest in local affairs, nor do we condemn a quiet, dignified activity which influences the political sentiment of a community. In small towns it may even be advisable or proper for physicians to occupy political offices, when he can do so without neglecting his patients.

There is one kind of political activity, however, into which we believe all physicians should enter, and wherein they have been neglectful. It is within the knowledge of the writer that a certain politician of prominence, when an important medical matter was being considered, advised his hearers to ignore the medical profession entirely in the matter (although they were the main persons interested), as doctors did not count at an election because they did not vote. Another man at this same interview said that he intended to support the doctors, because there were 100 doctors in his district, and he believed each one of them could influence 100 votes, and he proposed to rouse them from their lethargy. That 10,000 votes to be secured by the good will of the doctors was a political factor that was worth the reckoning.

If doctors have been lax in going to the polls on general election day, they have been even more so when it comes to the primaries, which is where they should make their fight.

There is no question about it that physicians should determine beforehand the stand taken by every candidate at the primary election, relating to all measures that have a bearing upon medical matters. Various selfish agencies are at work undermining us at such times. They are pledging candidates in advance, and if the profession does not rouse itself it will come to realize that a very large proportion of a legislative body, prejudicial to the best interests of the health of the community and the physicians, has been elected.

We advise every one of our readers to go to the polls at the primary elections, taking care to inform himself as to the position of his party candidates on all hygienic and medical matters. There are 150,000 physicians in the United States. We believe that they can influence votes to keep medical practice clean, and to favor solid bills that will enhance the health of the community; likewise will they be able to kill the many silly measures advocated by semi-educated or half-baked idealists.

THE NEW PRESIDENT OF THE PENNSYLVANIA STATE BOARD OF MEDICAL LICENSURE

THE recent election of Dr. Irving D. Metzger, of Pittsburgh, as President of the Pennsylvania Bureau of Medical Education and Licensure is fraught with much significance. It is a personal compliment to Dr. Metzger as a result of his faithful labor as a member of the Bureau, a credit to the efficient work of the homœopathic members, and an honor to homœopathy that a member of our school has been chosen as president of such an important board. In addition, it is a direct proof of the absolutely fair character of the organization and administration of this board. The criticisms that the Bureau was not functioning fairly to the homœopathic profession should now be quieted. The facts are that no sectarian thoughts have ever entered into the affairs and deliberations of the Bureau, which have been administered solely for the good of the Commonwealth, the protection of its citizens from unfit and irregular practitioners, and for the uplifting of the standards of medical education. Homœopathic hospitals have been dealt with on exactly the same plane as other hospitals (perhaps, in some instances, with even more elasticity and len-

iciency). Only two graduates of homœopathic medical colleges have failed in examinations in the past five years, and both of these have since passed, and are licensed to practice in Pennsylvania.

Dr. Metzger graduated at Hahnemann Medical College, Philadelphia, in 1904, and is 48 years old. He took a post-graduate course at the New York Ophthalmic Hospital, graduating in 1910, and studied in Vienna, in 1913-14. He is a noted ophthalmologist, practicing in Pittsburgh, and succeeded Dr. William Alvah Stewart, also of Pittsburgh, on the Bureau by appointment of former Governor Brumbaugh in May, 1916. He is peculiarly well fitted for the Bureau work by his temperament and his early training as a teacher in the public schools. Since he has been a member of the Bureau, he has spent much time inspecting medical colleges all over the United States, having inspected more than 40 per cent. of those in existence personally or with Dr. Baldy, thus gaining a most intimate knowledge of medical educational values. He is in a position to carry on favorably the work of the Bureau along the lines which have placed it far in advance of all other State Boards of Licensure in this country. This is particularly so in regard to standardization of hospitals for interne teaching, and for this alone the retiring President of the Bureau, Dr. Baldy, deserves the credit of placing Pennsylvania hospitals on a high pinnacle of efficiency.

Dr. John M. Baldy, the retiring President of the Bureau, has just been appointed by Governor Sproul as Commissioner of the newly formed Department of Public Welfare, the first such department ever organized in this country. Dr. Baldy is particularly fitted for his new work, which includes the activities of the former State Board of Charities, by his intimate knowledge of all the hospitals in Pennsylvania. However, the gain to the State will be a decided loss to the Bureau, and we cannot refrain from adding a eulogy on his work. He has been untiring during the eleven years which he has devoted with many sacrifices to the work of the Bureau, but he has strong belief in the idea that each of us owes certain duties to the Commonwealth and to the public, and he feels amply repaid by the success that has met his efforts to raise and maintain the standards of medical education and the hospitals in Pennsylvania.

**THE GREEK LETTER FRATERNITIES AND THE MEDICAL SOCIETIES: A
MATTER DESERVING OF SERIOUS THOUGHT**

ONE has but to scan the daily press the country over to discover that for one reason or another the Greek Letter Fraternities have succeeded in making themselves decidedly unpopular in certain districts, and subject to severe criticism in many others. We are told that in more than one locality their organization has been prohibited in educational institutions. A very unfortunate situation has thus been created, the end of which is not yet. Radical stands taken by both sides to the question have resulted only in a firmer setting of the schism, amounting virtually to obstinacy. When one studies the objects of the Fraternities, as formulated by them, he finds nothing whatever to criticise, as one and all are pledged to the furtherance of the interests of their alma maters, and of moral, psychic and physical welfare and well being of their members. Originally these associations confined their membership or activities to the literary colleges of the country; but some years ago chapters were organized in the various technical schools, including those devoted to the study of medicine, and it was then that our troubles began in dealing with their members.

Whether just or not, there seems to be a prevalent opinion among both the "ins" and "outs," that the joining of a Fraternity demands loyalty to the schemes of any of its members, whether proper or otherwise. Personally, we believe that the laws of the fraternities absolutely forbid their use for selfish reasons, and that men should not join the same for purposes of aggrandizement; and yet we know that is exactly what is done in a number of instances, and that, too, without a voiced disapproval by the better thinking members who, after all, constitute the majority and who assert themselves for the common good. "He belongs to my fraternity," is often assigned as a reason for choosing a surgeon or other specialist, or for assigning preeminence in medical societies. Really, is it not silly to think that such a condition exists? In several medical societies it is alleged that disruption has almost taken place by reason of the "battle of the frats." In some medical colleges it is furthermore alleged that attempts have been made to control medical faculties. In this, however, fortunately no advance whatever has been made.

Almost everyone with whom we have conversed on the subject has no hesitation whatever in admitting that the fraternities have gone altogether too far. They are essentially undergraduate institutions wherever they exist, and there is no reason whatever for them to carry their activities into professional and business life. So far as the student body is concerned it resents most energetically as an encroachment upon their prerogatives the interference of any fraternity organized by a post-graduate body. They regard themselves in a way as a select body of students, and quite naturally, therefore, resent the installation of post-graduates by their elders.

When controlled by wise leadership there can be no question about the unlimited power of the fraternities for good; when under selfish leadership, or maintained for political purposes they are pernicious to an extreme, and a menace to the institutions in which they exist.

Their abuse in the medical societies may not be so great as appears at first sight, nevertheless there can be no question that certain of their membership has made itself quite considerable of a nuisance in sporadic outbreaks. That the damage thus far has not amounted to anything is to the credit of the fair thinking majority. We need only be reminded that it takes but one noisy individual to break up the peace of a meeting.

The argument that fraternity reunions at medical meetings furnish an incentive for attendance by many who might otherwise have remained at home, cannot be denied; sentiment as to old friends is one that exists everywhere, and we are heartily glad of it. All of us are pleased to have reunions among our old friends and associates. Things are altered, however, when fraternity membership does not mean college associations, because many join after graduation. It is alleged that fraternities in medical societies interfere with the scientific program; in a measure they do. If their reunions are limited to times when a dinner may be had between sessions, they aid other matters and harm nobody. When on the other hand they are given a place on the official programs, thus supplanting important work, and providing nothing whatever for the occupation of non-fraternity physicians, they tend to disrupt, and they hurt themselves as much as they do outsiders.

It is the duty of the fraternities to study their power for good and evil most carefully, and take the following principles

to heart in practice as well as in theory: 1. An unselfish devotion to the institution in which the various chapters hold forth. 2. The abandonment of support of selfish schemes by individual members. 3. The refusal of the rights of membership to those who would join for no other reason than business and social advancement. 4. The relegation of fraternity activities to the leadership of students, and the elimination of the post-graduate member as the dictator of policies.

THE PENNSYLVANIA STATE SOCIETY MEETING

EACH succeeding meeting of this society has demonstrated itself to be more important and valuable than its predecessor. They have proven themselves to be both helpful and interesting to all members, whether the latter happen to be in general practice or working at a specialty. The meetings are especially instructive and beneficial to those who support them by their presence, and by a definite participation in the presentation of the program.

We appeal to every member of the Society to attend the coming meeting at Bedford Springs. All who can do so should plan to stay the full time, arriving on Tuesday morning and staying until Thursday afternoon. There is no more attractive mountain resort anywhere in the State to be found better adapted for vacation, recreation and rest, than this. Even without such an incentive there should be a large attendance, because important matters must be considered, viz.: Presentation of the proposed alterations and amendments to the by-laws; a free discussion of legislative and educational matters; reports on compulsory health and compensation insurance; reports on the advancement in medical science, preventative medicine, and the present status of homeopathy; and many other equally important allied subjects.

The loss to the "stay-at-homes" will be incalculable; the loss will be theirs. The committee has procured (a) an excellent place for the meeting; (b) superior hosts, *i. e.*, the Allegheny Medical Society; (c) good chairmen of Bureaux; (d) expressive essayists. A number of prominent visitors have been invited and are expected to attend. There will be numerous side entertainments for the ladies.

The roads for automobiling, especially the Lincoln Highway, are fine; in fact, Bedford Springs is on the Lincoln High-

way. Bedford Springs is situated on a branch of railroad, just off the main line of the Pennsylvania Railroad. The connection may be made at Huntington, by way of the Huntington & Broad Top, or at Altoona, by way of a Pennsylvania branch.

G. W. HARTMAN.

RESPONSIBILITY OF INTENSIVE TREATMENT METHODS WITH REGARD TO THE INCIDENCE OF EARLY NEUROSYPHILIS.—Frazer, of Aberdeen, reviews the current tendency to treat syphilis by intensive methods as if the main object in view was the elimination of the positive Wassermann, and argues for rational methods based upon the character and condition of the patient, avoiding as far as possible the mere treatment of a disease label. As many others before him, he regards such intensive methods as oftentimes doing more harm than good. He closes his able article with the following conclusions: 1. The responsibilities for the increasing incidence of neurosyphilis rest with (a) The tendency to treat primary syphilis *en masse*. (b) The method of working to a mechanical time table. (c) The blindfolded method of working to and for a negative Wassermann. (d) Failure to interpret pathological findings in the light of the clinical picture. (e) Losing sight of the central nervous system as regards the patient's future. 2. Modern early treatment fails in protecting the central nervous system by rapidly sterilizing the general system and thus depriving the intrathecal system of its antibody supply. 3. The nervous system is invaded coincident with the generalization of the organism. 4. Nervous system involvement may be symptomatic or asymptomatic. In the absence of clinical signs, a normal spinal fluid may indicate the successful overcoming of the organism by the central nervous system or the failure of the nervous system to react. It may also suggest that the general systemic circulation has been successfully sterilized before the intrathecal system was invaded. A pathological spinal fluid may indicate implication or protective power. In the absence of symptoms, we cannot accurately interpret the finding. 5. For the security of the future of the patient, the invasion of the nervous system should be taken for granted. 6. The occurrence of neurosyphilis is influenced by (a) the patient's power of resistance; (b) the natural resistance of the central nervous system and its inherent capacity for producing antibody; (c) the stage at which treatment is inaugurated; (d) the type of treatment employed; (e) the period over which treatment is carried out; (f) the type of organism responsible for the original infection. In this connection the question of a life cycle of the spirochaete *pallida* must be considered. 7. Great importance is attached to the value of clinical opinion, clinical observation and clinical judgment. These should be correlated with careful interpretation of pathologic findings. 8. The importance of treating each particular case on its merits and as an individual, instead of treating him as one of a series, is emphasized. 9. Treatment should aim at conserving sufficient antibody for the requirements and protection of the central nervous system instead of defeating one's object by rapid sterilization of the systemic circulation thereby leaving the defenceless nervous system to look after itself. 10. Antibody supply should be conserved over a period of years. The value of intramine as a protection for the nervous tissues warrants its inclusion in any scheme of treatment.—*American Journal of Syphilis*, April, 1921.

GLEANINGS

MEDICINE

Conducted by CLARENCE BARTLETT, M.D.

THE ARREST AND CURE OF DEMENTIA PRAECOX.—We all know that the prospects of a patient with dementia praecox are absolutely hopeless. No matter how innocent may be the beginning, apparently the ultimate outlook is terrible to contemplate. One, therefore, is ready to seize upon any suggestions offered in the way of treatment, however radical they may appear to be. Bayard Holmes of Chicago, presents in the *Medical Record* of August 6th, an argument in favor of the disease having its foundation in toxæmia arising in the colon. We may ridicule a dogmatic statement as we will, but his theory is less fanciful than others that have been set forth, and is worthy of trial. In fact we might well say many of these theories that have had big men back of them are absolutely discreditable to the logic and common sense of the medical profession. Holmes's method of treatment consists in appendicostomy, followed by daily irrigation of the cœcum through the colon, until all amino-acids are removed. He reports two cases in which good results were secured, although not ideal in the first case, which for some strange reason was the more recent of the two. The writer encourages us to try the treatment, even in cases that have existed for some time.—C. B.

TREATMENT OF ASTHMA BY AUTOGENOUS STREPTOCOCCAL VACCINES.—Sir Leonard Rogers writes to speak well of the results of the treatment of asthma by autogenous streptococcal vaccine. "The method consists simply in making cultures from the sputum, preferably that obtained during or soon after an attack, subculturing a number of colonies of streptococci, including any short chain pneumococci, so as to include a number of strains, and making up a vaccine of the strength of 100 millions in 1 c.cm., which can be conveniently put up in one of Wright's small rubber-capped bottles. The initial dose is $\frac{1}{4}$ to $\frac{1}{2}$ c.cm., and as soon as little or no reaction ensues it is rapidly worked up to 1 c.cm. weekly, and after several such doses to $1\frac{1}{2}$ to 2 c.cm., the larger doses being given at intervals of ten days. If any marked reaction or temporary increase of the symptoms occurs the dose should be decreased to one-half and cautiously increased again when no reaction follows an injection. The treatment usually has to be continued for two or three months and sometimes longer, several injections being given after definite improvement is observed to obtain more lasting results." Permanent recoveries were secured in $52\frac{1}{2}$ per cent.—*British Medical Journal*, July 16, 1921.

FIXATION ABSCESS IN THE TREATMENT OF TYPHOID FEVER.—Cataldi states that during a severe and prolonged epidemic of typhoid fever in Rome in 1912-1914 he observed that, while among the hundreds of injections of quinine given to malarial patients he had seen only two or three cases of suppuration, which was more of a chemical than bacterial character, with a puriform fluid consisting of pieces of necrotic tissue, among the typhoid patients he had seen a large number of cases in which quinine

injections had given rise to abscesses containing sterile pus. He observed, moreover, that the suppuration in these cases almost always coincided with the patient's improvement and recovery. During the autumn and winter of 1920-21 a fresh outbreak of typhoid fever occurred, when he determined to employ fixation abscesses, which were produced by subcutaneous injection of 1 or 2 c.cm. of oil of turpentine. He records 4 cases of severe typhoid, 2 in adults and 2 in children aged 11 and 14, in whom this treatment was employed with success.—*II Policlinico, Sez. Prat.*, June 6th, 1921.

EXCESSIVE PROTEIN IN DIETS.—Osborne and Mendel discuss the question of growth with diets containing more than 90 per cent of protein. Although it has been demonstrated that a carnivorous animal can be kept alive and maintained in activity for considerable periods on an exclusive diet of meat, it is not known whether growth as well as maintenance can proceed on a regimen entirely free from both fats and carbohydrates. Hammarsten has stated that omnivora and hervivora cannot survive on such a ration. The author's successful experiments in growing rats on food extremely poor in fats and in carbohydrates respectively encouraged them to test diets containing only minimal quantities of both. The mixtures included protein 95 per cent, inorganic salts 5 per cent, with a supply of vitamins A and B in the form of tablets of alfalfa (0.4 g.), and dried brewery yeast (0.2 g.) daily. On such diets when casein furnished the protein, animals have already grown to three times their weight at the beginning of the trial. The vitamin-bearing substances were the only noteworthy sources of either fat or carbohydrate, and supplied 4-8 per cent of the food eaten. If future experiments prove as successful as those described by these authors, then various problems of nutrition and physiological function can be approached from new experimental standpoints. The earlier experiments by Hammarsten, few in number in relation to this problem, were conducted on a less satisfactory plan, the food mixtures being inadequate in respect to one or more essential factors. It is to be noted that in Osborne and Mendel's experiments the growth of the rats was observed only until their weight was trebled. It has still to be determined whether rats will attain adult size and normal functions on diets furnishing proteins as the almost exclusive source of energy and tissue substance. Miss G. A. Hartwell has made laboratory investigations which go to show that the better the protein fed to the mother the more rapid, up to a point, the growth of the young, yet with excess of any protein in the mother's diet, the babies eventually die (or if they survive are by no means healthy or normal). It is suggested that this is due to failure of the milk secretion, preceded by some change in composition which is responsible for the spasms and abnormal condition of the babies. It is unlikely that nursing women ever take a dietary containing nearly as much protein as carbohydrate and practically no fat. But if we may argue from rats to human beings, it is clear that excessive proportions of protein in the mother's diet may lead to metabolic and nervous trouble in the suckling. In view of their possible medical application these experiments are briefly described. A fuller account will be published in the near future. We know little of the metabolism of even a single protein in any single animal, and practically nothing of the transformations of proteins in a suckling mother and of the metabolites that may be discharged in the milk under abnormal or even normal conditions of nutrition. It would be interesting to have an analysis of the milk in other animals giving suck while consuming excess of proteins. Experiments have been made which show that the metabolic machinery of adult rats works in a different way from that of young rats. Grown rats fed on one protein,

gliadin, with the other essentials of a diet, remain active and healthy and capable of reproduction. The offspring appear normal and grow actively as long as they are suckled by the mother, but if after weaning they are fed on the same diet as the mother, growth ceases at once. The young animal would seem to be unable to manufacture something which is present in the maternal pabulum, and which is not present in the constitution of the directly-fed gliadin. Once the growth stage is over, some new machinery must arise capable of transforming the gliadin.—*The Lancet*, June 11, 1921.

THE INDIARUBBER-BALL COUGH SOUND.—With a thoroughness which is characteristic of the medical school of Upsala, Dr. Bergmark has recently investigated the conditions under which the indiarubber-ball cough sound arises. Thus named by Dr. J. Mitchell Bruce, this post-tussic suction sound has been interpreted by some authorities as a sign of a cavity, on the assumption that it is generated by the elastic recoil of the wall of a cavity. Dr. Bergmark found this sign in 20 out of 39 cases in which the diagnosis of cavitation was confirmed by a necropsy. He failed to find it once among the 40 young and healthy persons whose chests he examined for it. In 35 cases of acute bronchitis, and in 52 of chronic bronchitis, he failed to find this sign, although in 18 cases the bronchitis was complicated by emphysema. The 12 cases of bronchial asthma examined for this sign, failed to show it. It was also negative in every case but one out of 42 in which the diagnosis of bronchial gland tuberculosis had been made by the X-rays. In Turban's first stage of pulmonary tuberculosis it was never found, and only in 3 of 36 cases in the second stage was it demonstrable, whereas it was found in as many as 56 out of 130 cases in the third stage. Of a series of 25 cases of pulmonary tuberculosis associated with bronchophony or coarse rales, the sign was found in 16. In another series of 25 cases, in which the sign was positive, 20 exhibited bronchophony or coarse rales. With regard to the post-mortem examinations, no correlation could be established between the size and distribution of cavities on the one hand and the presence of this sign on the other; in two cases in which there had been a suggestion of the indiarubber-ball sound, the necropsy showed no sign of a cavity on the same side. But as there were cavities on the opposite side, this sound may have been conducted from one lung to the other. In view of the possibility that infiltration of the lung without cavitation might give rise to this sign, Dr. Bergmark sought it in 47 cases of croupous pneumonia, but found it only in one in which the pneumonia was complicated by pleurisy. In another series of 77 cases of broncho-pneumonia, he found the sign only in one case, and here again it was complicated by pleurisy. Thus, it appears that infiltration alone is not sufficient to give rise to the sign. It seemed, however, possible that pleurisy, by interfering with the elastic recoil of the lung, might give rise to the sign in the absence of cavitation: in 47 cases of pleurisy 5 exhibited this sound. Dr. Bergmark comes to the conclusion that though cavitation is the chief factor in the genesis of this sign, its appearance may be determined by the presence of pleural adhesions over a cavity. If this is so, the absence of the sign over a cavity may be helpful as indicating the absence of adhesions in the neighbourhood, promoting the successful induction on an artificial pneumothorax.—*The Lancet*, June 18, 1921.

THE EFFECT OF ARSPHENAMIN ON THE KIDNEYS.—Anderson's experience shows that kidney functional tests of 39 cases after they have received 30 doses of arspenamin, each dose consisting of 4.6 decigrams, and distributed over a two year period failed to give any conclusive evidence of injury to the kidneys.—*American Journal of Medical Sciences*, July, 1921.

DERMATOLOGY.

Conducted by RALPH BERNSTEIN, M.D., F.A.C.P.

EXPERIMENTS WITH PARAFFIN-CONTAINING STUFFS (AMBRINE AND PARASAN) IN SKIN THERAPY.—A. Kissmeyer reports that during the Boxer rebellion in China (1900) satisfactory results were obtained in the treatment of burns with paraffin. The healing was quick, with good cosmetic results, but the method was very little known until the world war. As the liquid fire caused many bad burns, paraffin was produced in France in great quantities, and as "Ambrine" was used efficiently in skin therapy. The treatment is almost painless, and the author thinks that its use should be better known in the medical world. Special points in its favor are that ambrine never sticks to the wound, and the epithelium proliferation can be observed right from the beginning of the treatment. For general dermatology a new paraffin containing a preparation called "Parasan" has been produced in Denmark, which, according to the author, is better than the French ambrine. It has been found of value in the treatment of not only burns alone, but also many other wounds. The author believes that both these paraffin preparations have a great future in the service of the dermatologist.—*Ugeskrift f. Læger*, April, 1921.

THE USE OF UNGUENTUM HEPATIS SULPHURIS IN THE TREATMENT OF SCABIES.—Results obtained by Edv. Ehlers were good. In only a few cases was dermatitis caused by too strong and too long rubbing or by faulty preparation of the salve. Since the manufacture of the salve has been given to a private concern and the rubbing done by experienced persons, the results have been very satisfactory in each and every instance.

About 200 gr. of the salve is used at each time. The author thinks that a patient should never be allowed to do the rubbing himself. The patient is first given a bath, then the whole body, except the hands, face, neck and throat are painted with the salve by means of a brush. Then the patient puts on his clothes and goes home. He is ordered to rub his arms and hands with the salve before going to bed and to wash only these the next morning. On the following morning he may wash his whole body with a mild soap and hot water and put on clean clothes. This usually is sufficient to cure the scabies. The patient is told not to use any more of the salve without his doctor's orders, as an after irritation sometimes follows the treatment.—*Ugeskrift for Læger*, April, 1921.

LUPUS OF CHEEK. CICATRIZATION IN SINGLE SITTING BY ELECTROCOAGULATION.—P. Ravant reports the case of a patient eighteen years old, who had been operated on for lupus of the left cheek, dating back twelve years. In spite of numerous therapeutic efforts to cure, lesion becomes larger and patient asks if quick cure cannot be effected. The author proposes electrocoagulation. Thanks to the high frequency apparatus of Heitz-Boyer under chloroform, all lupid tissue was destroyed and at the end of one month cicatrization of the wound was attained. Due to the spread of the lesion, which measured about 8 cm. in width and 12 in length, the scar is very prominent and slightly retractile, but improvement is expected. Ravant emphasizes the services electrocoagulation can render in the treat-

ment of lupus in reaching the depths of diseased tissue—a feature in which most other methods fail.—*Bull. Soc. France, de Derm. et Syphil.*

PICRIC ACID IN THE TREATMENT OF SEVERE EPIDERMOPHYTON INFECTION.
—According to Richard S. Weiss, without apparent reason in the summer of 1920 there was an increase in the number and severity of cases of epidermophyton infection. Picric acid in water is recommended in the treatment of cases involving feet, superficial ulceration and much secondary infection. The solution does not benefit dry cases. Cotton should be bound about the infected parts and drenched thrice daily; it should be changed daily. After a rest of two or three days the patient improves and the swelling is allayed. Then picric solution should be discontinued, as it may become poisonous if used more than a week. The treatment should be followed by a daily foot bath of boric acid, zinc oxid, and calamin dusting powder between the toes. An alternative to picric acid is Whitfield's ointment, or pyrogallic salicylic acid combination. Picric treatment leaves a temporary yellow stain.—*Arch. Dermat. and Syphil.*, April, 1921.

PAEDOLOGY.

Conducted by C. SIGMUND RAUE, M.D.

STOOLS AND THEIR RELATION TO THE FEEDING IN INFANTS.—J. I. Grover gives a very practical description of the various types of stools and their clinical significance.

Stools are best examined in the napkins in which they are passed. When the napkin is unfolded, the consistency can readily be observed. Unless the stool is very firm, it will adhere to the napkin when unfolded, exposing the central portion. If the stool is firm, a wooden tongue depressor may be passed through it in order to expose the central portion.

Breast-fed babies usually have from two to four stools a day. Bottle-fed babies have one or two, and a great many would skip a day if not for a laxative. As a rule, the number of stools varies with the consistency. If there is one stool a day it is usually formed, and if there are three or more, they are likely to be soft or even watery.

Frequent stools are simply the result of increased peristalsis. When fecal matter of an irritating variety enters the intestine, peristalsis is at once speeded up in order to discharge the irritating material.

Infant stools are usually acid. The best way to test the reaction is to place a bit of litmus paper on the moist stool. As the paper gathers moisture, the blue litmus becomes pink if the stool is acid, and the red turns blue if alkaline. If the stool is dry a drop of water may be placed on a smooth part of it and the litmus paper applied.

Starvation stools are small, usually few, sticky, and very dark. They are composed mostly of detritus, bacteria and mucus, and are very dark because of the concentration of the bile pigments.

The high protein stool is the result of a small proportion of fat and a high proportion of protein in the food rather than of too much protein, and is not a mark of an indigestion. Its most characteristic feature is the shiny surface produced when the tongue depressor is passed through it. This shine must be differentiated from the glistening appearance of mucus,

and also from the natural moisture of all freshly passed stools due to their watery content.

Casein curds are colored on the outside like the rest of the stool. When they are picked out and rolled with the tongue depressor on the napkin, the color rubs off and the central portion is found to be clear white. If the baby is fed unboiled fat-free milk, the stool will often consist of casein curds and mucus, the mucus being caused presumably from irritation. If the fat-free milk has been boiled, the stool will be of the high protein type described above.

Breast milk stools are yellow to orange. Very young babies have the faculty of passing orange colored stools even when fed cow's milk. After the third month the stools become grayish even if the formula remains unchanged. Very rarely does a baby older than five months pass orange colored stools when on artificial feeding.

Light Colored Stools.—Stools containing no bile or colorless forms of bile are very light, almost white. Many forms of soap stools are very light.

Dark Colored Stools.—Meconium is very dark brown or green, almost black. Starvation stools are similar.

Green Stools.—Green stools are held in great horror by the laity. The number of stools, however, their consistency, and the presence of mucus and blood are of much more importance than the green color.

Pink Stools.—Urates from the urine often color the napkin pink, somewhat resembling blood. Certain oxidation products of bile from the stools will sometimes produce a pink color on the napkin just around the stool.—*Journal Amer. Med. Asso.*, February 5th, 1921.

THE MANAGEMENT OF SUMMER DIARRHEA IN CHILDREN.—A. G. Mitchell classifies the summer diarrheas for convenience of treatment into the following groups:

Mechanical—where the mucous membrane of the intestinal tract is irritated by indigestible material such as raw fruit or vegetable matter. **Fermentative**—where bacteria already present in the intestine or introduced from without cause abnormal fermentation of the food. The organisms are saprophytes and not parasites. **Infectious**—where the organisms are true parasites and attack the intestinal mucosa itself.

The bacteria which inhabit the intestinal tract in health and disease are of two main groups, acid-forming and proteolytic (or protein splitting). If one can determine which group is at fault in a given case of gastroenteritis the indication in planning the diet is definite. Food must serve not only to supply calories, but must be of such balance as to discourage the growth of the causative organisms, and to favor the growth of the antagonistic organisms. The majority of cases of summer diarrhea show an active proliferation of the acid-forming type of organisms in the intestinal tract. Such cases are recognized clinically when the stools are frequent, green, loose, excoriate the buttocks and are highly acid. The diet is managed as follows: In mild cases all that is necessary is to remove sugar and boil the mixture. In the severer cases a preliminary period of starvation is to be carried out. Twelve hours is usually sufficient, and during this period fluid, preferable as water, should be freely administered. After the starvation period there are several choices of food, all of which have a low sugar content and a comparatively high protein content. Fat

should be kept low, because in all intestinal upsets the digestion of this food element is interfered with. Boiled skimmed milk answers these requirements and should be given in dilutions and amounts depending on the age and weight of the child. Later as improvement occurs fat and sugar may be cautiously added. Albumen or casein milk answers well if it can be made. Powdered casein or calcium caseinate may be used with skimmed milk to reinforce the protein. Milk fermented with lactic acid bacilli has been used in this type of diarrhea with good clinical results. If employed it should be comparatively fat free and no carbohydrate added at first. In other words, the object of the diet is to keep carbohydrate low, and protein high.

There is a protein form of fermentative diarrhea in which, instead of green, acid stools, the patient has foul brown alkaline stools. Here the indication is clear to give low protein and fairly high carbohydrate, such, for example, as weak skimmed milk mixtures with carbohydrate added as lactose or starch.

When blood and pus are found in the stools the infectious form of diarrhea is present. Many organisms may be recovered from the intestinal discharges but the dysentery group is predominant. The gas bacillus may be present. From the microscopic appearance of the stool it is impossible to tell what organism is at fault. It is important to know the causative organism because the feeding in the two varieties is radically different. If careful bacteriologic examination of the stool is not possible, the test for gas bacillus should be made. This may easily be done as follows: To a test tube half full of milk add a portion of the stool about as large as a pea. Boil the milk for three minutes. Set aside in a warm place, preferably an incubator, and in 12 to 24 hours the milk will be full of gas bubbles if the gas bacillus is present. In the absence of a positive test for gas bacillus it is quite safe to assume that organisms of the dysentery group are the causative ones at work. This is especially true if the stools are alkaline in reaction.

If the dysentery bacillus is causative in a given case of infectious diarrhea it will be remembered that this organism thrives and produces its toxins when given protein to grow upon. The feeding should consist then of nothing but barley water for 24 hours, after which time 8 per cent. lactose may be added to the barley water. Not until the third day is a small amount of skimmed milk added to the barley water and lactose solution.—*The Weekly Roster and Medical Digest*, July 2nd, 1921.

ROENTGENOLOGY.

Conducted by WALTER C. BARKER, M.D.

X-RAY TREATMENT OF HYPERTROPHY OF THE PROSTATE.—Stern claims that in cases of hypertrophy of the prostate treated by the Roentgen Rays, there is relief of pain, frequency of micturition and bleeding. There is also softening and diminution in the size of the gland.

The cases in which this treatment is most successful, are the early ones before the "catheter life" begins. Even though the subjective symptoms are relieved, it is impossible, after the patient has once started using the catheter to get him to stop. When cystitis is present, it must be treated by the usual method before starting the X-ray therapy.

The technic is to introduce into the rectum, a blind pouch lead glass tube with an opening in it to expose the prostate. The patient is placed in the knee chest position, and the rays are directed through the tube to the prostate. Treatments are given once a week for four weeks, followed by an interval of four weeks. The series are repeated as long as is necessary.—*Am. J. of Roentg.*, June, 1921.

LEATHER-BOTTLE STOMACH (LINITIS PLASTICA).—LeWald reports five cases and discusses the relationship to syphilis and cancer of the stomach. He describes the contracted stomach with a thick wall as having the appearance in outline, similar to the leather water bottles which the Egyptians used. He concludes that this condition of the stomach may be due to cancer, syphilis or fibromatosis. The majority of cases are due to carcinoma, but before making this diagnosis it is well to exclude syphilis by the usual clinical methods. Fibromatosis can only be differentiated from malignancy at an operation, when it will be found that the lymph nodes are not enlarged. A piece may be removed for examination and a laboratory report of the section will confirm the diagnosis.—*Am. J. of Roentg.*, April, 1921.

CONGENITAL ATRESIA OF THE ESOPHAGUS.—Skinner refers to the literature on this subject and reports the case of a female infant who always vomits immediately after nursing. An X-ray examination was made which showed that the opaque meal was stopped at the level of the body of the fourth dorsal vertebra. As soon as the esophagus was filled, the child started vomiting the meal and continued until it was all expelled, none of the meal passing through into the stomach.

A gastrostomy was performed and forty-eight hours later, the patient died. An autopsy revealed that the upper part of the esophagus ended in a pouch at the bifurcation of the trachea, and was bound to the trachea by fibrous tissue. The lower part of the esophagus extended from the stomach through the diaphragm and then blended into the mediastinal tissue. The stomach was normal in development and but slightly small in size.—*Am. J. of Roentg.*, June, 1921.

OPHTHALMOLOGY.

Conducted by WILLIAM M. HILLEGAS, M.D.

RETINITIS OF CARDIOVASCULAR AND OF RENAL DISEASES.—Some features of the ophthalmoscopic picture of the retinitis of cardiovascular disease and of renal disease are so uniformly found that their presence may be used as a basis for the classification of retinitis into three fairly distinct types, which Benedict, of Rochester, Minn., notes as follows: 1. The retinitis of acute nephritis. 2. The retinitis of chronic hypertension and nephritis. 3. The retinitis of arteriosclerosis. To these must be added the retinitis of diabetes, which probably does not depend on diabetes alone, being somewhat dependent on arterial changes for its presence.

Arteriosclerosis may or may not be a factor in the production of the retinitis of acute nephritis. In severe cases of acute nephritis, especially in young persons, there may not be any sclerosis of the retinal arteries. If the nephritis does not last too long all evidences of retinitis may dis-

appear and the function of the eye be left unimpaired. If the nephritis and retinitis should last for a long time however, or if there should be a number of recurrences even of mild degree, the retinal arteries will then show signs of degeneration and sclerosis.

Nephritis may occur in a person who has a well developed general or localized arteriosclerosis with fibrosis or sclerosis of the retinal arteries. The ophthalmoscopic picture is then composed of features characteristic of arteriosclerosis and of acute or chronic nephritis as well. This is the form most commonly found in cardio-vascular-renal diseases of middle aged and old persons, the albuminuric retinitis that is of such grave significance. It may follow arteriosclerosis from any cause, and is usually accompanied by high diastolic blood pressure and increased blood urea with decreased functional activity of the kidneys.

Benedict avers that the sclerosis of the retinal arteries due to hypertension can be definitely diagnosed ophthalmoscopically and as easily recognized as the retinitis of general arteriosclerosis and the retinitis of nephritis. For the purpose of the clinician finding this difference is very significant, and not finding it deprives him of the privilege of actually seeing what is going on in the body.

The most prominent factor in the production of retinitis in diseases of the vascular system and of nephritis is sclerosis of the retinal arteries, to which are added other features characteristic of the etiological factor of the sclerosis, and a careful analysis of the ophthalmoscopic picture presented may indicate the type of constitutional disorder back of it all, and give important information with regard to its severity and course. It has been shown that long-continued hypertension produces degeneration of the middle coats of the arteries, that in turn contributes to diseases of the kidneys, brain and other organs. It has been estimated that 40 per cent. of persons with high blood pressure have changes of the retinal arteries that can be discerned with the ophthalmoscope, many of them in the early stage of degeneration.

Benedict describes in detail the ophthalmoscopic pictures of general arteriosclerosis, hypertension, sclerosis of the retinal arteries, nephritis, and diabetes, and states that combinations of two or more of these types are quite frequently found in the retinitis of cardio-vascular-renal diseases.—*Amer. Jour. of Ophthal.*, July, 1921.

EYE STRAIN.—Gonzales has seen a number of cases with what he reports as new symptoms of eye strain, and some others that he terms the equivalent of eye strain. In the first group, there occurred hyperpyrexia and delirium, at times an alternating paralysis and even attacks of apoplexy, with the ordinary symptoms of asthenopia. Aphasia, he claims, is another not very uncommon complication, amnesia and hyperimagination were present in other cases. Some of the cases observed presented ocular disturbances, such as pain, ocular paralysis, and oculo-sympathetic symptoms, with the ordinary symptoms of eye strain, including in many instances some form of scotoma. In the second group of cases, the so-called "equivalents" of eye strain, there were periodical attacks of vertigo, pseudo-angina pectoris, pseudo-epilepsy, coryza, dysphagia, etc., including tachycardia and at other times its opposite, a diminished frequency of the pulse. These intense symptoms complicating eye strain are, in his opinion, a

neurosis of the cervical sympathetic due to autointoxication dependent upon some not yet explained effect of the endocrine glands.—*Amer. Jour. of Ophthalm.*, Vol. 3, p. 700.

TREATMENT OF GONOCOCCUS CONJUNCTIVITIS.—Rinkes-Huygens gives the results secured in the treatment of the ophthalmia of the newborn and adult in Amsterdam clinics. The treatment is employed as long as there is secretion. The patients remain in bed and the nonaffected eye is protected by a watch crystal. The affected eye is cleansed frequently, in severe cases as often as every five minutes. The eye is slightly opened for the removal of pus through small movements of the eyelids. 1-5000 sublimate solution is usually employed. Twice daily, or more often, the eye is irrigated with a syringe, with 1-1000 potassium permanganate solution, and if the condition does not improve the everted eyelids are treated with 2 per cent silver nitrate. If this does not reduce the swelling and redness of the conjunctiva copper sulphate in substance is applied. Atropine is used with corneal complications.—*Amer. Jour. of Ophthalm.*, Vol. 3, p. 394.

UROLOGY

Conducted by LEON T. ASHCRAFT, M.D.

RENAL TUBERCULOSIS: A CRITICAL STUDY OF A SERIES OF CASES TREATED SURGICALLY, CASPARI.—(*J. d'urol. med. et chir.*, 1920, x, 329.) The author gives the detailed clinical histories of 16 cases of renal tuberculosis treated by operation. Eleven were those of women and 5 those of men. In most of the cases the right kidney was involved. The age limits of the patients varied from 18 to 57 years.

Caspari's first finding in the histologic study of a number of specimens was that surgical tuberculosis of the kidney develops as a rule from a medullary lesion. In only 7 of his cases did it appear probable that the condition originated in the cortex. The pyramids appeared to favor the bacilli.

In 4 of the cases the kidney was low and mobile but Caspari does not believe that ptosis plays an important part in the development of renal tuberculosis. Adiposis of the tuberculous kidney was observed in 4 cases.

The specimens showed cavities such as are usually found in the tuberculous kidney. They were arranged around the central zone of the kidney, involved only a part of the kidney, or were situated irregularly in the parenchyma. In 2 cases cysts were found; one of them contained a calculus.

In about one-third of the cases the kidney pelvis was moderately dilated and showed other signs of tubercular invasion. The ureter was usually inflamed and had thickened walls.

Caspari describes the general symptoms upon which a diagnosis of renal tuberculosis is based. In some cases palpation will not reveal the condition and deep pressure will not provoke the least pain. Examination of the urine for the Koch bacillus is essential. In the author's 16 cases this examination was positive in 12. The absence of the Koch bacillus in the urine, however, does not exclude tuberculosis. Another test of importance is the test of animal inoculation, but even negative inoculation does not rule out the condition.

The best methods of diagnosing renal tuberculosis are cystoscopy and ureteral catheterization. Cystoscopy shows which kidney is diseased and reveals the nature of the cystitis. Ureteral catheterization furnishes reliable information regarding the condition of the ureters and permits separation of the urine from the two kidneys.

As regards the treatment Caspari states that anatomical and clinical facts show that renal tuberculosis does not become cured spontaneously. In none of the kidneys removed in his cases was there any evidence whatever of a tendency toward spontaneous recovery. Surgical treatment alone puts an end to the lesions. Operation should be performed as soon as the condition has been diagnosed if the other kidney has been found normal. Anaesthesia should be induced with pure ether because kidney tuberculosis is secondary to pulmonary tuberculosis and therefore irritation of the lung must be avoided. The author uses 2 parts of chloroform to 1 part of ether. As a rule an extra-peritoneal lumbar nephrectomy is done and extra-capsular removal of the kidney effected. Two large drains are then placed in the cavity.

Renal tuberculosis is curable if nephrectomy is performed at the earliest possible date.

AN AID IN THE DIAGNOSIS OF TUMOR OF THE URINARY BLADDER.—D. R. Melen, *Journal American Medical Association*, 1921, lxxvi, 782. Occasionally in cases of tumor of the bladder cystoscopy is impossible because of congenital or acquired strictures, hypertrophy of the prostate, adenoma of Albarran's lobe, or some similar condition, profuse bleeding, or intolerant or contracted bladder.

In this type of case the author suggests the use of cystograms. A case is reported and the following conclusions are drawn:

1. It is possible to demonstrate a tumor of the bladder by means of the Roentgen ray.
2. The older methods—injecting the bladder with air or an opaque solution—will not always demonstrate the tumor.
3. An air cystogram should be taken first, a second picture made after the bladder has been filled with 15 or 25 per cent. solution bromide solution, and a third picture made immediately after the bladder is emptied.

PROGRESS IN KIDNEY AND URETERAL SURGERY.—D. N. Eisendrath, (*Medical Record*,) points out that progress in kidney and ureteral surgery has been along three lines: (1) In diagnosis, (2) in operative technique, (3) in the more accurate interpretation of clinical symptoms.

Improvements in Diagnostic Methods.—These have been chiefly the result of the perfection of radiography as applied to the urinary tract, the chemistry of the blood as it interests the urologist, and the bacteriologic study of renal infections.

Improvements in Operative Technic.—Of chief interest are: (a) the study of the anomalies of the renal vessels and (b) the almost general substitution of the operation known as pyelotomy for that of nephrotomy.

More Accurate Interpretation of Symptoms.—This particularly applies to the well-known symptoms of hematuria, pyuria and ureteral colic. None of these symptoms can any longer be considered as pathognomonic of any particular condition of the kidney.

SURGERY.

Conducted by J. D. ELLIOTT, M.D.

PANCREATIC CYST FOLLOWING CHOLECYSTECTOMY.—Bollin and Saltzstein report a case of pancreatic cyst which developed symptoms within three weeks after a cholecystectomy without drainage. Symptoms prior to operation suggest a pancreatitis were present in addition to gangrenous cholecystitis and gallstones.

The cyst presented in the epigastrium, left hypochondrium and extended about 3 inches below the umbilicus and contained bile pigments and acids, amylase and trypsin. Drainage of the cyst, 2½ months after the cholecystectomy, was sufficient to effect a cure.

The authors feel that to draw conclusions from one experience is hazardous but they have seen pancreatitis associated with gallstones recur following cholecystectomy, and in this instance go on to cyst formation. This does not militate against the assertion that cholecystectomy frequently cures pancreatitis, but it is evidence that this does not always happen. Perhaps the conclusion is justified that in cases of pancreatitis complicating gallbladder disease, especially if there is pronounced infection, one of two methods should be followed: (a) cholecystostomy with drainage for several weeks, or (b) cholecystectomy with additional drainage of the common duct.—*Jour. Am. Med. Asso.*, May 28, 1921.

SURGERY OF SUBSTERNAL AND INTRATHORACIC GOITERS.—Pemberton states the results of the operations for the removal of substernal and intrathoracic goiters are very satisfactory. The patients are almost immediately relieved of most distressing symptoms, and they are most grateful. The mortality is low. There were sixteen deaths in this series of 542 operations (2.9 per cent.). Two may be classified as due to faulty technic, one of these to the loss of blood after a thoracotomy for the exploration of a huge intrathoracic cancer, and the other to septicemia, probably originating from the wound. Three patients died from pneumonia. Eleven (68 per cent.) died from acute hyperthyroidism seventy-two hours following operation. The average preoperative basal metabolic rate was 43. These patients were recognized as bad surgical risks; most of them had been treated medically before the operation.—*Archives of Surgery*, January, 1921.

A METHOD OF CRANIOPLASTY.—Ballin states that when the dura, meninges or brain substance become attached to the overlying skin there often develops a "trephine syndrome." The symptoms of which are: (a) Headaches, constant and severe, often associated with melancholia or perversion of the disposition, emotional disturbances, insomnia, etc. They may be made worse by weather changes, sunlight, heat, exertion, etc. (b) Unpleasant sensations of vertigo or nausea, especially when suddenly changing position, stooping over, turning the head quickly, etc. (c) Inability to tolerate external vibrations, as a moving train or shaking automobile; sometimes there is dizziness on walking or inability to stand the flicker of a movie film. (d) A sense of insecurity, due to the constant dread of further injury, often preys on the patient's mind. "The existence

of a loss of substance preoccupies the patient so that he lives in a continued state of inquietude and brooding."

To overcome this he advises an early cranioplasty and describes his method as follows: 1. Procure the graft by exposing one or two ribs on the side of the thorax through a flap incision. We use the sixth and seventh ribs, the middle of the incision being about the midaxillary line. 2. A quadrilateral piece of fascia is excised from the pectoralis fascia, somewhat larger than the skull defect to be covered. This fascia is kept in a warm saline solution. 3. The rib is exposed by pushing the muscles aside. The periosteum is incised along the upper margin of the rib; then the outer half of the rib is chiseled off, leaving the inner half intact upon the pleura. This is done by chiseling along the upper margin with a narrow, thin-bladed chisel, splitting the rib gradually for the required distance. After the rib is split throughout the length of graft desired, the graft is removed by biting through each end with strong bone scissors. The splitting need not be carried down to the lower or inferior edge of the rib. A very little caution will avoid entering the pleura. Grafts can be taken from two and three adjoining ribs, if necessary for covering a large skull defect. These grafts are also kept in saline solution, and the chest wound is closed in layers. 4. The skull defect is exposed by a quadrilateral flap. The skin is carefully dissected from the underlying adherent brain or dura, though the minute dissection of all scar tissue from the brain, advised by some, is not deemed necessary. The dura is separated from the periosteum around the edges of the defect and the edge of the bone taken away for one-quarter inch around the entire periphery, using a gnawing bone forceps or small chisel. Irregular defects are made regular in outline to receive the grafts properly. The fascia transplant is next placed over the exposed brain, pushed underneath the bone edge and smoothed out. Sutures are not needed, in our opinion, to keep the fascia graft in place. 5. The bed for the reception of the bony graft is now prepared as follows: On opposite sides of the defect the outer and inner tables are separated by driving the chisel lightly between the two, along the exposed edge of the diploe. With only a few strokes of the chisel a short slot is thus easily formed in the cancellous middle layer of the cranium. 6. The rib grafts are put in place by simply inserting each end in the prepared slot. If the rib is made a trifle longer than the defect it will tend to curve outward, away from the brain, and will keep its position in the slot firmly because of its elasticity. Two or more grafts can be placed side by side to bridge a large defect. 7. The skin flap is turned back and sutured in place.

Among the advantages claimed are that both fascia and bone are obtained from the same location. The rib seems to have a natural line of cleavage in its center. As the pleural half of the rib is left in situ, there is rapid regeneration and no rib defect results. A graft consisting of only half the thickness of the rib has a considerable degree of springiness and elasticity to it. This allows it to be easily molded to the skull without the necessity of sawing half way through the graft at short intervals. The wedge-shaped slot fashioned in the diploe for its reception requires only a few strokes of the chisel. There is no bleeding as in exposing a wide area of the diploe, no foreign material is needed for fixation and the graft can be set in with curve enough to separate it from the underlying brain.—*Surg., Gyn. and Obs.*, July, 1921.

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SOME PROBLEMS IN SYPHILIS

BY

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PROBABLY no other topic in medical literature during the past five years has received so much attention in scientific meetings and in medical journals as has that of syphilis. Several factors have combined to bring this about, particularly the introduction of the Wassermann test and the discovery of arsphenamine. These have taken the diagnosis and the treatment of syphilis from the former unsecure and uncertain foundation and placed them upon a strictly scientific base. Empiricism and guess work have been replaced by accurate diagnosis and adequate treatment. Another important factor in this unusual activity has been the wide publicity given to venereal disease as a whole by the medical departments of all nations during the recent war. So common have been these discussions in both the spoken and printed word that many in our profession have doubtless become heartily tired of the whole subject. For a person in these times therefore to present a paper upon the topic of syphilis to an aggressive up-to-date audience, presupposes either some new aspect of the topic or a distinct degree of audacity. Which of these horns of the dilemma I impale myself upon will be left to your decision.

During the past few years it has been my privilege at the Massachusetts Homœopathic Hospital to have charge of a large amount of serological work, also to oversee the treat-

ment of those found to be luetic. In this institution of about 550 beds we make routine Wassermanns on all "house" and "private" medical, surgical and obstetrical cases as well as many more in our large out-patient department. All cases thus discovered (and they are not a few) are then referred to our Social Service Department which sees that these patients return at such times as may be necessary for adequate treatment.

It has further been my privilege to have charge of the syphilis clinic at the hospital that is held under the auspices of the Massachusetts State Board of Health as a State Clinic. By this fortunate combination it has been possible to watch very carefully both clinical and serological variations that might not otherwise be correlated.

These things are cited merely to form a background for the purpose of showing that certain facts or contentions to be adduced later are not based upon purely theoretical grounds.

During these past years in reviewing the literally vast literature on syphilis I have been impressed with the voluminous amounts, upon certain phases and the relative paucity of articles upon some others. Thus Wassermann technique has been covered from every apparent angle and column upon column has been presented upon it. Any laboratory worker who has not written up his own pet method or modification, be it anti-sheep, anti-human, anti-goat, anti-fowl, etc., is almost an exception. Similarly article upon article has appeared, each differing from the other, upon the proper method of treating the disease, once it is recognized. We hear much about reactions, drug toxicity, etc., upon all sides, and the treatment of neuro-syphilis has been voluminously covered. Some topics have received much less attention. Among these may be mentioned, correlation between clinical and serological diagnosis when the latter results are somewhat indeterminate. But little, comparatively, has appeared about the diagnosis of syphilis in the pregnant woman or her proper treatment once its presence is recognized. Very little is known concerning the effect of such treatment upon an unborn infant already infected in utero. The same paucity of information appears concerning that point of vital importance to the patient, namely, prognosis. These and some other points seem to offer sufficient of importance to justify still another paper upon a hackneyed but vitally important topic. Whether my conten-

tion is justified by this article or is not, must be left to your judgment.

In the first place some comments upon the Wassermann reaction. Thibierge says:

It must be remembered that this is a non-specific test for the purpose of determining the possible presence of syphilis. Differing from the distinctly specific Widal test, the type determination test for pneumococci or the complement fixation test for gonorrhoea, its exact *raison d'être* is still largely problematic. As such it is perhaps not surprising that there is so great a diversity of opinion concerning the details of its performance. Some urge the use of a relatively slightly delicate antigen thus avoiding making too many false positives as certain ones have done, while others are equally strenuous in their advocacy of a delicate antigen as a means to prevent overlooking an occasional case of syphilis. Almost every one has his own pet method, differing in slight or vital respects from that of almost everybody else. In such uncertainty, whose diagnoses are we to accept?

In my own State we have tried to solve this question in the following way:

Several years ago the heads of the various laboratories assembled in conference and decided upon a standard method of technique that would be followed by all. This was intended to be a mean between the two extremes and was to be used not by all there represented, but must be used by any other laboratory in the State that wished to have its result accepted by the State Board of Health. It was further provided that the State Board of Health would provide, without expense, to these co-operating laboratories such antigen and amboceptor as they might need. Thus in Massachusetts all the principal laboratories are using the same standardized amboceptor and antigen and the same technique. This is a method that, we believe, should be more widely adopted either by other States or by the National Government, as it makes uniformity of results in a field otherwise far from uniform. It further gives us all an opportunity to measure our own pet methods with these uniform ones and thus ascertain their value or limitations. Few if any of these laboratories content themselves with one series of tests, practically all performing them in duplicate and some in triplicate. This is a result most desirable. To illustrate, let me explain how it applies to my

own laboratory and incidentally how we make a serological diagnosis of syphilis.

The Wassermann tests are always done in duplicate, two different antigens being used. One of these is a very delicate cholesterinized one, the other a less delicate acetone insoluble or "lipoid" one. The former of these undoubtedly gives an occasional false positive reaction on account of its delicacy while without question the latter fails to pick out some mildly positive cases. This variation is taken advantage of as follows: Any case that fails to react with the former, a more delicate antigen, is considered negative, while any reacting with the latter or less delicate one, are treated as positive. With the technique as we apply it then a positive reaction with both antigens is reported as positive and a negative result with both is considered to be negative. This leaves an intermediate group reacting positively to the delicate but negatively to the other antigen. Here a diagnosis must be made with caution and often requires clinical history and examination and repetition of the test. By following this procedure then we believe that we make the fewest possible mistakes. This question will be taken up again later as it applies to various special fields. Having temporarily decided upon our attitude upon the Wassermann reaction let us consider in what respect it should be a guide for treatment.

Everybody is agreed that this test giving positive results in a case that may be clinically syphilitic strongly corroborates the diagnosis. Does, however, a positive Wassermann in a symptomatic case without history justify the inception of intensive anti-syphilitic medication? The protean manifestations of the disease must be borne in mind in making our decision; also its marked periods of latency extending at times over many years. In such a case a doubtful or feebly positive reaction should be disregarded unless persistently present as it has but little significance. This is particularly true if it occurs in only the more delicate of the duplicate tests already noted.

If, on the contrary, it is out of what has been called the "intermediate group" and shows frankly positive results with two antigens when repeated once or more, the case should be considered and treated as one of syphilis. In other words any person showing a consistently positive Wassermann by our tests and not presenting evidence of other disease that at times

may give confusing results (advanced tuberculosis, malignancy, acute septic infection, etc.), is considered to be syphilitic. Allow me to illustrate. In our hospital wards we do not make serological tests on any febrile cases nor upon any one recently subjected to an anesthetic. False positives are occasionally encountered in carcinoma although the possibility of malignancy originating at the site of an old luetic scar should be borne in mind. I have seen one that is believed to be such. As a rule, however, our routine tests, made prior to any operations pick out those infected with remarkable accuracy. Apart from such exceptions, however, a strongly positive reaction is considered to be evidence of syphilis and we govern ourselves accordingly. In such cases we talk rather frankly with the patient (using the word syphilis or not as the case seems to demand) and urge adequate treatment upon the ground of "life insurance." Such a stand seems to be eminently justified as irrespective of our belief concerning the curability of the disease we can certainly hope to postpone the period of its symptomatic renaissance. Not only is the patient studied individually but the family is investigated and thoroughly Wassermannized. We believe, therefore, that one is justified in administering intensive anti-syphilitic treatment in certain cases upon the evidence of the Wassermann reaction alone even without symptoms or history. It is surprising how often adequate history can be obtained after treatment has been started and the disease assumed to be present even in the heretofore most "innocent" of cases.

Having now begun treatment upon serological evidence alone how long are we justified in continuing it upon similar evidence? In the great majority of early cases symptomatic cure comes early after treatment but this is never recognized as a reason for discontinuing medication. Should we then continue our intensive dosage until the Wassermann reaction becomes persistently negative? While this should be the goal always before us, it is one that at times should not be striven for indefinitely. It is well to remember that in old, healed, or quiescent tuberculous lesions, the cutaneous test is not infrequently persistently positive. Similarly at times we encounter much treated, symptomatic Wassermann fast cases. Here much discretion should be exercised and the renal functions carefully observed, as too much mercury or arsphenamine may give rise to distinct kidney disturbance. In other words, some cases with positive serology may be unsuitable for treatment.

Having now finished what might be called the laboratory part of this paper let me briefly recapitulate:

1. The Wassermann test is not a specific reaction.
2. Within certain limitations it is a dependable test for syphilis.
3. Within these limitations it is, alone, of sufficient exactness to justify the inception of intensive treatment.
4. It is an indication but at times a very fallible one of the proper time to administer drugs.

Let us now pass to the more practical side of the subject. In so doing I will but touch one or two topics that have been less discussed than some others.

The first of these is the question of the disease as it affects the pregnant woman. Having been for many years connected with a general hospital having a maternity department of about one hundred beds as well as a large outpatient department it has been my privilege to observe many cases of syphilis in pregnant women. In earlier days the great majority of such were either passed unnoticed or a *post hoc* diagnosis was made on account of some condition of the child. Very shortly after the introduction of the Wassermann reaction we applied it to our maternity as a routine procedure. Immediately the number of syphilitic mothers greatly increased. Immediately also we found that a certain percentage of cases mildly positive by serology proved to be in all probability not syphilitic. A patient would show a moderate positive once and then a few weeks later upon examination be entirely negative. Again it was early noted that occasionally a patient under observation would show several moderately positive reactions before delivery and uniformly negative ones after the puerperal period. The question then came, were these also false positives or did the abnormal condition of pregnancy stir up an old syphilitic infection that was at other times latent? In the light of our present knowledge we can only say that probably each of these explanations is at times true. As has been stated I use two antigens, a more and a less delicate one and take advantage of any divergency in their results as follows:

Any blood that uniformly gives negative results with the more delicate or cholesterin antigen is classed as negative and any one giving similar positive results with the lipoin antigen is placed as positive. In other words, our positive serological

diagnoses are made with a less delicate antigen and our negative ones with a more delicate one. By this means, we believe that we make fewer errors than by using any one form. This leaves an intermediate or uncertain group in which the less delicate antigen is negative and the more delicate one is more or less positive. Such a group must be viewed with suspicion and in our maternity cases treatment is not instituted unless clinical history, symptoms or further blood tests render a diagnosis of lues more definite. Upon such grounds then rests our diagnosis in the pregnant woman.

In a general maternity hospital, possessing both public and private wards, what percentage of patients are those presumably syphilitic? Dr. D. L. Belding, of our Evans Memorial for Clinical Research, in an unpublished article, reports the results of his collection of statistics from the Robinson Maternity, from his own laboratory and from mine and other data obtained elsewhere. Some of the tables may be of interest.

TABLE I.

Hospital	Location	% Positive Wassermann
Cook County	Chicago	11.3
N. Y. Lying-In	N. Y.	3.05
East End	London	3.9
Kings County	Brooklyn	8.0
Sloane Maternity	N. Y.	9.1
Robinson Memorial	Boston	9.7

Whether the lower percentage from the N. Y. Lying-In and the East End Hospitals might be increased by more uniform methods or not, it will appear very evident that the problem of the syphilitic in our maternity institutions is a very active one, involving about one patient in about every ten or fifteen admitted. Let me present another of Dr. Belding's tables taken from the Robinson Memorial. This deals with the race incidence of the disease.

TABLE II.

Nationality	Percent Cases	Percent Syphilitics
Negro	1.11	36.00
Scotch	0.97	22.73
Austro-German	0.75	17.65
Armenians	0.84	15.78

Swedes	1.46	12.12
Greeks	0.97	11.77
American	56.50	9.63
Irish	8.05	8.78
Canadians	9.10	7.73
Jews	13.63	5.86
English	3.85	5.75
Italians	0.75	0.00

Undoubtedly this will undergo modification as the total number of cases increases from year to year.

Still another table deals with the station in life of the patient as indicated by the ability to pay for accommodation.

TABLE III.

Room Cost Per Week	Percent-Cases	Percent Syphilitics
\$17 to \$21	16.15	8.52
12 to 15	71.80	9.00
Free to 10	12.05	10.27

Also, a table dealing with the station in life of the husband.

TABLE IV.

Occupation of Husband	Percent Cases	Percent Positives
Skilled Labor	44.0	34.6
Unskilled Labor	32.3	42.8
Mercantile	11.9	12.2
Salesmen and Agents	2.2	4.5
Army and Navy	3.5	2.0
Professional	1.9	1.5
Shop Proprietors	1.9	0.5
Unmarried Women	1.8	0.5
Agriculture	0.8	0.5
Unemployed	0.1	0.0

Assuming then that in general about one prospective mother in every ten or fifteen has a luetic infection "what," in the language of the old Tweed ring, "are you going to do about it?" From the sociological standpoint the question is an acute one.

P. C. Jeans states that a minimum of 10 per cent. of marriages involve a syphilitic individual, 75 per cent. of the offspring from such marriages are infected and 30 per cent. of

the pregnancies terminate in the death of the fetus at or about term. Of those born living 30 per cent. die in infancy as against 15 per cent. under normal conditions. Only 17 per cent. of all pregnancies in syphilitic children survive the period of infancy. The Utopian method of solving the problem would be universal Wassermannization with intensive treatment for positive cases and prevention of sexual union in any such positive individuals. In our present democratic life this is, of course, impossible, although I believe that negative physical and serological tests should be a prerequisite of every marriage. At present we must face conditions as they are, however we may strive to improve them in future. Our mode of attack along the congenital and maternal lines at the Robinson Memorial Maternity is somewhat as follows:

Each prospective patient is encouraged to come to the hospital as early in her pregnancy as possible. At this time full history is taken and examination made. Blood is taken for Wassermann test. If the test is positive, the name of the patient is given to the Social Service Department by whom the family antecedents are investigated and the patient brought back for further study in the luetic department. Here she is carefully questioned and studied to obtain any possible venereal history or symptoms. If such are obtained she is placed upon intensive treatment at once. If there is no history or symptoms the Wassermann is repeated. When this proves to be persistently positive the husband is interviewed. To one unaccustomed to this form of work it will be surprising to note the frequency that adequate venereal history may be thus obtained by the use of tact, common sense and good temper. Many is the time when we have seen men enter the clinic in such a way as to almost cause apprehension for physical harm, and leave it in a most subdued and grateful manner after a short private conversation.

The intensive treatment that we follow consists of six weekly intravenous injections of arsphenamine, twelve weekly intramuscular injections of salicylate of mercury and daily ingestion of proto-iodide of mercury and potassium iodide. This covers a period as long as we usually have before delivery but whenever we do have more time the course is partly at least repeated. When we first began the intravenous injections we feared possible induction of miscarriage as a result of the drug action.

Now, after a number of years' experience with it, during which time we have never been able to notice the slightest tendency toward such action, our fears are no longer active. The drug used is our own State product, prepared in 1 per cent. solution of freshly distilled water and neutralized with a not necessarily fresh solution (15 per cent.), chemically pure caustic soda, preserved (for weeks at times) in a paraffin bottle.

The dose begins with one decigram for each sixty pounds of weight and increases to a maximum of one decigram for each thirty pounds. The patient has a practically empty stomach and bowel. Sufficient is made up for the entire clinic period of two or three hours. Gravity method is used without preliminary saline and the Kaufman syringe is invariably employed. Reactions of any kind are very exceptional. Patients return home immediately after the treatment and are instructed to take a light diet for the next twelve hours with an abundance of water.

The salicylate of mercury is suspended preferably in animal oil (goose), often in a vegetable oil, never in a mineral oil on account of varying degrees of solubility. The dose varies from one-half to one grain weekly at intervals. We possess a distinct belief also in the efficiency of mercury by mouth when mixed with a readily soluble vehicle; such a vehicle we find in sugar of milk. Tablets of proto-iodine one-tenth grain, are thus prepared and in many cases a surprisingly small number give evidence of distinct mercurialization. Inunctions are very seldom used on obstetric cases. Potassium iodide is advised in older cases for its reputed effect of softening gummatous deposits and opening up the entrenched spirochaeta to the attacks of the other agents. Alone it possesses no curative powers.

Thus in brief is the treatment, not differing essentially from the course prescribed for other forms of the disease. By it two things may be accomplished: First, the eradication, so far as possible, of the disease in the mother, thus rendering her less liable to infect the child. Secondly, the treatment of the child already infected in utero through the channel of the maternal blood, the placenta and the fetal blood. Concerning the success of the first aim, there can be no question as many cases bear this out. About the second, however, while a number of instances seem to bear this out, sufficient data have not yet

been accumulated to justify definite claims. Allow me to quote corroboration of these claims. Lissner states that (*Jour. A. M. A.*, Sept. 17, 1918, p. 850):

Intensive treatment of every syphilitic mother during pregnancy will (a) prevent miscarriages, premature births, and still-births due to syphilis, in the vast majority of cases; (b) produce a live child at full term who will not develop congenital syphilis, in the majority of cases. Such treatment does not interfere with the normal course of pregnancy, labor or puerperium. Lissner urges that such ante-natal therapy should be widely advocated by medical men of prominence and influence, in order that it may become a well established routine procedure. Immediate wide-spread adoption of this method will insure a large increase in the future population of the world. Williams says that among 157 pro-treated syphilitic patients, 52 per cent. were either born dead or presented some evidence of syphilis at birth. That among 103 inefficiently treated cases 37 per cent. were so diseased, and in a group of 163 where the treatment had been efficient, including both arsphenamine and mercury only 7.4 per cent. showed evidence of disease. These results are more favorable than those reported by Marcuse who says that 90.2 per cent. of untreated mothers have syphilitic children, 82.4 per cent. of mothers treated prior to pregnancy have such, while 46.6 per cent. show syphilis where treatment has been given during pregnancy.

Our results at the Robinson Maternity are entirely in accord with these figures. Many cases, showing positive Wassermann and giving a history of repeated miscarriages and other luetic symptoms, have received thorough treatment over a period of several months and have been delivered of normal appearing children showing repeatedly negative Wassermann over a period of months. Of course, such a result is not invariable as not a few children have shown syphilitic lesions after birth. These have been particularly noted when the treatment has been started late in the pregnancy and presumably after the child had been extensively infected.

Perhaps the most striking feature of the whole subject has been the almost complete absence of miscarriage or birth at term of a macerated fetus. Thus far I have been able to locate but one such case. This coupled with the fact that seldom have any of the infants shown signs of active lesions at birth, even when they have appeared weeks later, seems

to strengthen our theory that we can in this ante-partum manner treat the child easier than in any other way after birth.

Allow me to summarize this phase of our topic.

1. Routine Wassermann tests should be instituted in all maternity cases.

2. From 5 to 10 per cent. of all cases will prove to be syphilitic.

3. Once a definite diagnosis is made, intensive treatment should be instituted; the earlier in pregnancy the better.

4. The danger to the patient is no greater than in non-pregnant persons.

5. If this is carefully followed out, the death rate will be much reduced and syphilis will be changed from the most prolific cause of fetal death to one of relative infrequency.

Concerning the transmission of the disease from mother to offspring let me add my word in favor of "congenital" syphilis as opposed to the so-called "hereditary" form. An hereditary disease is one, the elements of which exist in the germinal cells, spermatozoa or ovum, at the time of their union. To me the continued life and activity of a cell infected with a parasite almost as long as the cell itself, is entirely incomprehensible. As such I feel that the so-called "hereditary syphilis" is non-existent. Congenital syphilis is unfortunately one of the banes of our "syphilized" life and is surprisingly common in all walks of life. With its multitudinous lesions coming at almost any age post partem you are all very familiar. Patients respond quickly from the clinical standpoint and less satisfactorily from the serological one to intensive treatment. In those from birth to early puberty the administration of such treatment is often a problem. It is, of course, impossible to secure any intelligent co-operation while the mechanical difficulties of introducing arsphenamine are often great. In infants the veins of the arm are seldom accessible. Often the anterior jugular can be located with considerable ease and less frequently in poorly nourished children the veins of the scalp. Failing these, I have personally used the superior longitudinal sinus rather frequently. This can usually be located at the posterior angle of the unclosed anterior fontanelle. It is not a method that I can recommend to others although I have never yet had any difficulty with it. Prior to its use, the parent is always warned of the serious difficulties and given opportunity to voice any objection. This is, of course, a com-

mon route to obtain blood for a test in babies, a thing otherwise often most difficult. One other means of approach now being used is the rectal one. We merely introduce a moderate dose in aqueous, neutralized solution and allow to remain for an hour or so. Thus far we have no laboratory reports upon the absorption but clinical results seem to definitely indicate that such does occur.

Leaving this phase of the topic let us proceed onward pausing but a moment at one very important but well covered point. This is neuro-syphilis. A number of different methods have been devised for the introduction of arsphenamine into the cranial and spinal cavities. These have been used with varying degrees of success. For several years we used the routine Swift-Ellis technique but in a somewhat parallel series we also studied a procedure then very new but now more widely adopted. The results of the latter have been so relatively satisfactory and the dangers so slight that it has in our hands entirely replaced the former or any of its modifications. I refer to lumbar drainage. Our technique is as follows:

With the usual precautions, but to a patient in the hospital or his own home only, an intravenous dose of arsphenamine is given. The patient is in bed. A lumbar puncture is immediately made and fluid varying from ten to thirty centimeters is withdrawn. Bed care is continued till the following morning when the case can usually be dismissed. By this draining off part of the spinal fluid we induce rapid reformation of more fluid from the blood. The blood is now at about its maximum arsphenamine content. Accordingly as the plasma passes through the choroid plexus and elsewhere it carries with it the arsenical preparation in solution. It further seems probable that the choroid plexus is even more permeable to arsenic under these artificial conditions. Its presence in the cerebro-spinal fluid is a demonstrated fact. By this means the drug can reach cryptic foci of infection entirely inaccessible otherwise.

In short, then, this method possesses the minimum of danger, it obviates the necessity of intraspinal injection with its constant menace, it practically eliminates the reactions (otherwise often severe) and it evidences equal or greater degrees of benefit both clinical and serologic.

One more topic remains for us—prognosis.

What shall we say to our luetic patient who comes to us

asking, "Doctor, can I be cured?" In other words, "Is syphilis curable?" I believe this question can be answered by "yes" but with such an answer must go certain modifications. I suppose we all believe in the possibility also in certain limitations of curing another polymorphic chronic infection, namely tuberculosis, and this in spite of the fact that in such cases some reactions for that disease persist indefinitely and that post mortem evidence of its ravages might be found. While we believe this in the abstract, it is seldom that we can apply it in the concrete and absolutely assure an individual that he or she is definitely cured. We say the case is arrested, quiescent, apparently cured, symptomatically cured, etc.

Similarly as I interpret it, may we deal with our luetic problem, with the added advantage that we have somewhat more delicate means of determining the end results.

Insufficient time has elapsed between the introduction of arsphenamine and the present to allow of absolute deductions especially along neurologic lines. All the evidence, however, points toward the fact that under certain conditions the later manifestations of lues may be greatly modified or entirely eliminated.

Not a few cases of reinfection are on record and in spite of a recent article to the contrary, I am still inclined to agree with the older idea that the second appearance of a chancre and sequellae on a part of the body different to the first indicates that the first infection has been eliminated.

Apart from theoretical considerations we may perhaps make a differentiation between symptomatic and serologic cure realizing that even when both are present we are not justified in assuring any individual that an absolute cure has been brought about in his or her particular case. What, then, can you or I say of prognosis always presupposing modern adequate treatment? The disease will be taken in the classic stages with the full realization that as they frequently overlap they are by no means precise but are used largely for convenience.

PRIMARY SYPHILIS.—Symptomatic cure practically invariable. Serologic cure at least for years, almost invariable. Absolute cure probably common but unsafe to so assure any individual patient without some limitations.

SECONDARY SYPHILIS.—Symptomatic cure, usual. Serologic cure usual but often requires much persistence. Absolute

cure. Inasmuch as there has been a wide dissemination of the spirochaetes throughout the body by the blood and lymphatics the possibility of foci hidden from anti-luetic drugs becomes greater as this stage lengthens. When, however, after vigorous treatment and repeatedly negative blood and spinal fluid Wassermanns over a period of years no signs persist a complete elimination of the disease seems possible.

TERTIARY SYPHILIS.—Symptomatic cure. Where the lesions are dermal or where they consist of gummata in various non-vital parts such as muscles, periosteum, bone, cartilage, mucous membranes, etc., symptomatic cure is usually anticipated in greater or less completeness. In cerebro-spinal lesions while benefit is the rule, entire elimination of symptoms is more exceptional. In some phases even this benefit is not often expected.

Serologic Cure.—This is less frequent than elimination of symptoms although in the non-neurological cases it is a goal not seldom achieved. Even in neurological cases especially (and naturally) the more acute forms negative serology is by no means an exception.

Absolute Cure.—A definite promise of absolute cure to any tertiary syphilitic is very hazardous although the possibility of such cannot be denied. When the infecting organisms have been active for months or years in the body it is probable that they have lodged in more than those places accessible to our diagnostic powers of localization and it is further possible that some one or more of these foci may be inaccessible to any anti-luetic measures that we can invoke. Even here, however, we may often accomplish a surprising degree of good and bring about what we might at least call an apparent cure.

I cannot refrain from mentioning very briefly one illustrative case both on account of its as yet continued convalescence and because it was the one that started me on lumbar drainage. It is that of a machinist 26 years of age who had been infected about eight months previous to my visit in 1913. He had passed through the earlier stages under the usual treatment. Gradually headache developed, increased and became incessant and unbearable. He lost muscular co-ordination, staggered in walking and when he came to the hospital could stand only with crutches and then required some one to support him. His mentality was dull and was steadily becom-

ing worse. His blood Wassermann being positive, treatment intravenously was administered. Then as a diagnostic procedure lumbar puncture was performed immediately after. The improvement was so distinct and so prompt that it was decided to repeat the technique. When this was done there was found to be a correspondingly gratifying degree of improvement in the spinal fluid serology. At present, seven years later, this man is in apparently perfect health and has negative blood and spinal fluid findings.

On Thursday last I made a puncture on a second case treated almost seven years ago with similar negative laboratory results continuing to the present. I fully realize, however, that the citation of a few cases is no convincing proof of any contention and will also desist from taking time for more. From the standpoint of prognosis, therefore, it seems possible to tell our patients:

1. That in the primary stage they may expect clinical and serological cure which in all probability for them means complete cure.
2. That in the later manifestations of the disease the great proportion of clinical symptoms can be eliminated but that the prospect of absolute cure decreases as the duration of the untreated disease increases.
3. That in almost any period the institution of proper treatment may be expected to add materially to the duration of health or of life.
4. That it is only by persistence over months and at times years that the best results can be attained.
5. That he or she should continue under the occasional observation and study of a competent physician long after all symptoms of the disease have disappeared.

TRACHOMA TREATMENT.—Tertsch' method of treating trachoma is first to instil cocain into the conjunctival sac or to inject novocain beneath the conjunctiva of the lids, which are well everted. He proceeds to eliminate all gelatinous and papillary tissues with a knife or with scissors whose blades are directed parallel with the surface of the lids. The surface of the conjunctiva is also bruised with a curette or with a very blunt rasp. One should not try to eliminate all the diseased lesions at one sitting. After the operation cold compresses are applied, silver nitrate instilled or iodoform ointment, or copper sulphate introduced.—*Ophthal. Liter.*, March, 1921.

HUMAN ENGINEERING

BY

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(Read before the Homœopathic Medical Society of Philadelphia County.)

I HAVE selected this topic for several reasons. First, because it is the most important medical field of the immediate future. Second, because it is the most vital question for the business and social worlds of today. Third, because it is of historic interest to any true follower of Hahnemann. Nowhere in medical literature could I find so apt a text for my remarks as in the *Organon*, where the plea is made for the study of the "spiritual and dynamic changes of the animal economy."

If I carry the idea somewhat beyond the point where he left it I shall be following his method of advancing and developing the ideas of his time.

Mechanicisms have a peculiar fascination for the human mind: the child naturally wants to see the wheels go round: the older boy revels in his mechanical toys: the natural man, who has not been too far stultified by a classical education, finds a fine joy in contemplating the perfect working of a beautiful machine.

It was a sorry day for medicine when human mechanics were considered degrading and I can only hope that the degradation of the profession to the same level may not occur again. With a fairly wide knowledge of the profession and of the literature of medicine I am not in the least enthusiastic over the general standard either of comprehension of human mechanics or practice in accordance with such comprehension, but as there are some few signs of improvement I shall speak more hopefully than may be justified by the conditions. When we come to expand our field from human mechanics to human engineering perhaps I shall become visionary.

I shall maintain throughout that without some large understanding of the "spiritual and dynamic changes of the animal economy" there can be no science or art of medicine, and only the saddest empiricism can exist.

To forget that the essential thing about a machine is the

dynamic principle and to become enamored of the parts to the neglect of the working of it would very soon be discouraged in ordinary engineering, but how often we find such striking stupidity within the fold of our beloved profession!

It is interesting to consider the conception which Hahnemann had; but to do so correctly one must realize truly how utterly crude were the notions generally held, else we will not understand his attitude toward certain lines of investigation. The stupidities of the specialists of his day were not a whit less astonishing than are those of the same class today, but how long it took to discredit them by latter day scientific saints is a matter of history.

With remarkable vision he perceived the impossibility of finding truth by the nauseating, unsound methods of wasting energy and displaying stupidity then prevalent. And he has been regarded as unjust to certain fields of work where his words clearly apply to the then used methods of highly incompetent groups of so-called students. What he did see, and that clearly, was that matter was not the vital thing, but the dynamic force and its working, and in this he is still far ahead of the medical profession.

If biology could breathe a little of the ozone of genius such as Hahnemann exhaled in his electric moments how quickly would the dead and encumbering shell of materialism fall and the sweet young lobsters of that science could expand and grow and take on new dignity until some new shell hemmed them in after the natural law of their kind, we would then hear more of the dynamic that caused the nucleus and less of the morphology of the various fragments.

The fight between materialism and intelligence is as old as the antagonism between day and night and will surely last while we are here to observe. But if medicine could only be aroused to a realization that materialism stultifies the mind and precludes even the comprehension of things called material, progress in thought could be noted. If medicine could be brought to realize that it is the force that counts rather than more or less minute chunks of matter, more would have been done for the world than will ever be accomplished by our medical trusts—endowed and others.

If medicine could be dragged away from the contemplation of carrion in the anatomy and pathology work shops and made to realize just for a second what one little cell is

and does when it is alive. And if we could imbue the student with the love of living things and a joy in understanding the significance of living processes and of the "spiritual and dynamic changes of the animal economy," we could hold our heads high among the sons of men as those born to a goodly heritage and worthy of confidence and esteem.

Oh! that some new Hahnemann would come to stir the stagnant pools of medical habit by calling them from things to thoughts. Of course, he would be roughly handled by the sanctified abominations. If all the provinces of medicine could be brought to a new realization of the vastness and complexity of the problems of living things, we would hear less of such putrid doctrine as "Morphology for Morphology's Sake," we would stand a chance of becoming what I believe we will at some dim distant epoch become—real human engineers.

It is not so very long since there were no engineers, either mechanical, chemical or electrical. Consider, therefore, how these things came about; what they really are and what lessons they hold for us. If the mechanical engineer considered his wheels, levers, pulleys, shafts, pieces and items as the average surgeon does his anatomy, he would be about the sorriest failure imaginable. Then why do we tolerate such unthinking to go on in our midst where human life is at stake?

The mechanical engineer does not fail to know the parts of his machine, but he goes much farther; he gains a true knowledge of the quality of the material, and he masters, above all, the working of the machine, and he incidentally knows something of the purposes of the parts and adjustments. He knows what strains will be taken up by the parts and what will happen under various conditions of service, and how to determine what has happened when something has gone wrong. Do you, as medical men, size up to this standard with regard to the mechanisms with which you deal? Or do you accept the fashions and fads of modern medicine? Are you human engineers or are you fashionable doctors or political pedagogues? Do you deal in names of parts or do you think in relation to such things as may be casually mentioned in the select compositions which form so much of our literature? Do you stop often enough to consider that the millions of living individual units of the body are slaving away under rigid law to fulfill purposes from the time when as yet there were no members down to final dissolution? Do you stop to real-

ize that you are directing a vast host of slaves when you treat one human being and that there are "spiritual and dynamic changes" that it is your business to understand?

What these changes are are not written in matter to be read with an ultramicroscope, but are there only to be comprehended by an interpreting and perceiving mind. The plans and specifications in the human body are all there, and if by chance they fail we have monsters or death.

Do you realize that your master grasped a principle by vision when it was less easy by reason of the lack of knowledge of embryology, cell doctrine and modern engineering? I would have you grasp the great principle of dynamics before you attempt to consider the great and complex problems of human engineering.

If you build your house on the shifting sand of modern specialism and laboratory whims and fancies you will not get very far, and when you come to the chemical, biologic and psychologic problems you will fail for want of foundation, but if you stop at mechanical problems you will have only the cellar of your structure. You must grasp the great idea of the human body as only incidentally a machine, only incidentally a vast chemical workshop, but fundamentally a marvelous biologic complex which is the home of a soul. You will gain such an idea not by building a new tower of Babel out of the mass of laboratory reports, but you will need mental vision. There is no word that conveys such wrath and scorn as the word visionary. There is no one who so exasperates the stultified and defective incompetents who fill up the interstices of the profession. No one who arouses the vituperation of the fossil-bearing strata of the profession so surely as does one who gives evidence of vision. Indeed, it reminds one of the perturbation of a barnyard full of placid fowls moved by the shadow of an eagle. The question that must remain is whether the great medical profession is to be on the barnyard plane or is it to have visions from a higher level?

I could harrow your minds and torture your emotions by the hour with narratives of what I have seen in the practice of medicine. I could, from my own experience of the last twenty years, drive you by sheer force of evidence by citing case after case of medical failures or worse to a point where you would have to admit, as I have been forced to admit, that

medicine without a new and greater vision is doomed to degradation.

To say that thousands of persons were being poisoned to death or bled to untimely ends required some courage in the days of Hahnemann, but all students of medical history admit the fact. To call a halt on the slaughter of child-bearing women by the filthy European hospitals through infection, was not a gracious act of courtesy, and was met with unbounded rage, yet it was desirable that it should be done even though the offender suffered at the hands of his colleagues in the profession.

The man of vision today finds medicine full of frightful things which will be looked upon with horror a hundred years hence. And only then because some one will venture to use vision and having seen will dare to call a halt to the abominations. The profession of reformer is always a very dangerous one, seldom profitable, not rarely fails to accomplish the end for which it is sacrificing so much. One may hesitate to adopt it but one cannot ignore self-reform.

Human engineering is of vast importance to you as individuals, for it should be your occupation. It is more significant for the race for with the intensity and recklessness of what is called civilization the race is doomed unless it finds some profession to save it. It was very well to have Egypt, Babylon, Greece and Rome rise and fall. They were but small parts of the human race, but today this civilization is becoming universal, and when it falls there will be nothing left. It is, therefore, high time to stir the race to a new sort of consciousness regarding itself and its care for its future.

The race must have engineers to guide it by individuals and by groups. These will not be modern Frankensteins to concoct supermen, but sane, sound men who first understand the larger fundamental principles, not materialists, but those who comprehend the "spiritual and dynamic changes of the animal mechanism." Human engineering has but a limited recognition at present, in fact, it is much in the position of an expected child: already present and somewhat in evidence but not visibly so.

It has had foreshadowings in history. Such men as Napoleon have used it. He used it when he elevated his chief surgeon to unheard of prominence in the army. He used it when he planned for the feeding, clothing, transportation of

his troops, and he used it when he uttered those remarkable speeches addressed, not to matter but to hidden springs of force and action. What he did showed that he recognized the bodies, minds and souls of men in managing his military affairs. He introduced human engineering into military science. But the world could not easily learn the lesson. True, we find bits of progress, as when the great Swiss tunnel, halted by disease, was set going by a stroke of human engineering. Or, when the Panama Canal, having utterly failed by reason of the inability of the French to grasp the vision of the little Corsican and having squandered millions of francs and thousands of lives, had to wait for our masterful President, with his modern education, horse sense and inflexible purpose. Here and there in the affairs of the world we find outcrops of intelligence, business men discovering that success depends upon efficiency of the help they employed.

How slow business was to take up all forms of engineering is a sad story of human stupidity. Some of us remember the birth of electrical engineering. Most of us can recall the development of chemical engineering, and even today it has hardly a respectable hold on the mass of manufacture. Some few can recall the bursting boilers and tumbling down of factories and the railroad smash-ups that have passed away under civil engineering of various types.

The great war has done much to bring home the lessons of engineering, but much will be speedily forgotten and have to be learned all over again. Human engineering has always been involved in certain movements, such as public health, child saving, eugenics, safety first, pure food, but one has only to consider the condition of education, city management and planning, housing, factory construction and management, child labor, popular and insidious poisons, air pollution, water pollution, dress, heating, lighting, ventilation, and in fact most of our living problems to realize that the safe and sane ways are passed by for the fads of the hour, that we have not yet settled down to the application of fundamental principles.

The one industry, insurance, which rests on human engineering, though its advancement is of the crudest as yet, will do much in forcing stupid or wilful business to adopt methods of human engineering insofar as injury and death are involved, but the vastly important mass of the subject must come by other means. Has the medical profession responded to this

vast stirring on the outside? Do we find the young man in the medical schools getting any insight into the great principles they will be called upon to use by the enlightened public in the near future? Do you hear any one raising his voice in the halls of the medical societies calling on the profession to assume its share in the vast movement? I am sorry to say that only in the most trifling way has the profession responded.

When we consider the sort of bacteriology, chemistry, toxicology and pathology that gets taught in the average school, we realize that medical engineering has small chance. How dead is anatomy! Physiology has no adequate hearing, and psychology is practically non-existent so far as the medical profession in America is concerned. We must admit that human engineering will never be born if it waits for the activity of modern medical pedagogues. It gives but another illustration to the old saying that our education does not begin until we leave college.

Human engineering is a medical subject and must always remain the very essence of the practice of medicine. Who else can take up the problems? Who else is fitted even to feebly, stupidly follow the path? It certainly seems to be about time that the profession stirred itself, took its problems seriously in hand and went forward on its line of duty in building up this essential department.

I am fully aware of the answer of certain of the petty medical school politicians, but the fact remains that no finding ideal has yet entered the brain of those in control of medical education. Not one school teaches human mechanics as a basis for surgery and the results are deplorable. They do not comprehend the skull as a factor in trauma, nor do they attempt to consider the lateral ventricles. They drain off the cerebro spinal fluid with the innocent ignorance of a child. They bind up the bellies of fat women after operation, lay them flat in bed and after recklessly stimulating the mechanically killed heart they sign the death certificate "embolism." Not only the surgeon is at fault by causing all sorts of weird things to be done to the heart, but the whole medical profession is greatly at fault. I have yet to find a student of medicine who had been taught the simple principles involved in the action of the heart.

The technique with knife and needle is too often excruciatingly crude and reminds one of the attempts of a boarding

school lad darning his socks. No sort of shame seems to attach to the most astonishing mechanical blunders. I have seen so many joints ruined, spines stiffened and bone injuries botched, so many sins against so many principles that form the very beginnings of human engineering that I cannot help speaking feelingly for those unexcusable blunders hurt when they affect loved ones.

It is no wonder drugless pathies flourish when poisons are taught to be given as advised by the selling agents of the latest and most fashionable drug, or when stasis is a term, but the idea is nearly non-existent in modern medicine, yet probably everybody in this room has suffered from it and probably not one was able to obtain the proper treatment within regular medicine. Surgeons and dentists seek after infinitesimal deposits of pus in certain localities, yet practice the expectant or, as I say, mortuary method in the large cavities.

If you would realize something of the utter fatuity of affairs read Gray's Anatomy on the Mediastinum, where it is described as the space between the two layers of the pleura and between the sternum and spine. Whereas it is about as complex as the engine room of an ocean liner. Of the dynamic power of the nervous system in relation to health and disease there is a sweet and blissful ignorance that is by no means relieved by the uttering of a few cant phrases.

Who comprehends the indices of chemical processes in the body and how many know the value of the skin and its appendages as such? Nor is this the worst, if one dares to call attention to such things as I have done, there are crude and barbarous jeerings that display not only lamentable ignorance, mental rawness, but worst of all, a totally wrong moral attitude toward the study of the problems involved in the work of the profession. Who takes the trouble to balance the chemical problems of the processes involved in disease, after they have had a culture made by a near-bacteriologist? Who considers the utterly different qualities of the tissues of the foetus and the growing child from the adult? Who considers the physiology of anything when he sees a nice operation ahead? Rather will he give out platitudes regarding calories and vitamins, though a chunk of coal has calories and there were vitamins in that terrible substance called beer, both of which are not now used for diet. Who follows the unspeakable nonsense of a certain diagnostic textbook in the matter of the tongue, when

it is taught glibly enough that it has no significance as an indication of the condition of the digestive tract? How many obstetricians understand the feebleness of the respiratory system of the new born, and the way to avoid clogging it improperly? How many persons wash out the eyes of new born to prevent ophthalmia, yet allow the kidneys to suffer by the very same infection, yet fail to comprehend the genito urinary infections in the new born.

It is well to keep up our courage and if possible our pride in the profession, but it is well not to be elated falsely and to assume what we have not, rather should we settle down to the cultivation of a new sort of medicine that is in harmony with the principles of human engineering. Medical engineer is that rather restricted phase of human engineering which has to do with the individual who is sick. I know of no field of human endeavor that is so difficult and complex. It is inclusive of most of physics, chemistry, biology, psychology, but in addition involves all of pathology and toxicology and the great art of therapeutics. Perhaps it is too large for the class of persons who can be induced under present conditions to enter the profession, but if that is the case it is high time we stopped wasting the time and energy of our students on modern fads and taught them principles. The world is waiting for human engineers. Perhaps a better word will some day be coined to separate watchful from unconscious waiting. However, much of the unconscious there is in this waiting may be an open question but surely business and society in general are waking up to the need of some right guidance in the handling of the various human problems. Education has been wildly, often frantically, experimenting with various fads and must some day settle down to rational analysis, reasonable deductions and sane plans. Philanthropy has tossed about upon the highly perturbed sea of emotion and has done much more good than anything else in spite of misdirection for after all there is no more grim mistake to be made with regard to humans in general or individually than for seclusion thinking, selfish, platitudinizing, scholastic pedants to plan for the other 99 per cent. of the human race in accordance with certain deficiencies or hypocracies of their own, and disregard of the actual qualities of body and soul of the great throbbing mass that needs help.

Medicine most of all needs a big dose of mother tincture

of the fresh drug that will set up a real reaction so that we shall in future have true medical engineering instead of the unspeakable sophistries and intolerable abominations which, like a malignant endemic, sap the vitality and stultify the high efforts of men who are earnest and honest but who, by reason of having been led by blind leaders, have not attained vision. Medical engineering is coming slowly. It must come. Surely it is our duty to see that something is done to make it come more quickly.

It is the duty of every high minded member of the medical profession to cultivate the right attitude toward it first in his own soul and then publicly. Not all will be called to sacrifice for it, but some with more than their share of vision will be forced to receive the unpleasant reaction arising from the lower strata of the profession.

HOMŒOPATHY VINDICATED BY MODERN RESEARCH

BY

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PERHAPS this seems like a big title for a paper. It is—so big that we shall not attempt to cover all the ground. Perhaps also it should be phrased “Homœopathy *Being* Vindicated by Modern Research,” for the vindication is still going on and is not complete. But certain it is that modern research is steadily proving the truth of the main views of the great Hahnemann, published over a hundred years ago. And strangely enough much of the vindication of these claims comes from the laboratories of those who are not Hahnemann’s followers, but members of the predominant school who, not so long ago, ridiculed his views as the product of imagination run wild.

In fact the homœopathic branch of medicine has very largely neglected the scientific investigation and research work that would *prove* to the unbiased mind the truth of the therapeutic system they follow. And this is perhaps natural, for the reason that the homœopathic school has always made a specialty of *therapeutics*; and, heretofore at least, has not had

the equipment, in the line of endowed laboratories, that the dominant school has enjoyed. Recently, however, funds have been furnished for this work, and a beginning has been made to test out, by scientifically accurate methods, the truths so long maintained and tried out in clinical experience. This is as it should be, and offers a fair prospect of modernizing homœopathy in more ways than one, and getting rid of much of the chaff that is mixed in with the golden grain of our very valuable but rather unwieldy *materia medica*.

That there is need of such scientific testing of fundamental principles, and that this is a peculiarly opportune time for such research, is abundantly manifest from the loss of confidence in the curative value of drugs so universal in the ranks of the orthodox medical school. This state of affairs, in fact, has become notorious, and has been largely responsible for the rise and growth of the many drugless systems of healing now in vogue. When Dr. William Osler, one of the great leaders in medicine, writes, "He is the best physician who knows the worthlessness of most medicine;" when his successor at Johns Hopkins adds, "The death-blow came first to poly-pharmacy; today, with many, pharmacotherapy as a whole is almost moribund;" when Dr. Frank Billings, former President of the American Medical Association, testifies that "drugs with the exception of quinine in malaria and mercury in syphilis are valueless as cures;" and when Dr. Cabot of Harvard Medical School, speaking before the Boston Homœopathic Medical Society, says, "I doubt if you gentlemen realize how large a proportion of our patients are treated without any drugs at all, and how little faith we have today in the curative power of drugs"—I say, when leaders in the dominant school are willing to admit this, it is high time for the homœopaths to be on the alert to show how the therapeutic law in which they have steadfastly believed, and the principles which they have put into practice these hundred years, are being vindicated by the best modern medical thought and investigation. For be it noted that while a loss of faith in the curative value of drugs is a very wide-spread characteristic of the dominant school of medicine—as shown by these quotations—the homœopaths, on the contrary, have maintained their faith in the curative value of drugs, when homœopathically applied, and have steadfastly maintained and believed the great principles enunciated by Hahnemann, and have marched on from victory to victory in

many a campaign against the thousand ills that flesh is heir to.

And they have good reason to be proud of the faith that they profess, for the further scientific men delve into the mysteries of nature, the more it becomes evident that the great principles of homœopathy are founded in truth. In fact, modern research, by the aid of laboratory methods, is corroborating and setting the stamp of its approval upon the philosophy and the therapeutic methods of our great founder.

I. Consider the wide-spread, though often veiled, recognition of the homœopathic law of cure itself, and the still wider practical adoption of that therapeutic principle in actual practice. For example, aconite, or aconitine, in small doses is now almost universally used by even the dominant school, especially in the alkaloidal branch, as a febrifuge. Indeed, the alkaloidists, not many years ago, heralded it as a great discovery that aconitine was the best and surest drug we possess to reduce typical sthenic fevers. Straight homœopathy, which the followers of Hahnemann have known and practiced for a century; yet heralded as a great discovery by the old school only a few years ago, and no credit given to the homœopaths, either.

The same thing is true of a score of other drugs, now recognized as valuable, and used homœopathically moreover, by many well known and successful practitioners of the dominant school. For example, bryonia in inflammations of serous membranes, calcium sulphide in suppurative conditions, pulsatilla in female disorders, belladonna in inflammation of mucous membranes, and rhus in rheumatic conditions, are drugs commonly used in our day by our old school friends. We need only read the issues of such a journal as *The American Journal of Clinical Medicine*, for example, to be convinced of the truth of this statement. Some of the articles published in this and other journals are good homœopathic doctrine, though written by members of the dominant school.

In fact, the words of Dr. Billings, just quoted, are a veiled admission of the truth of the homœopathic law, for he might have easily discovered one reason why quinine is valuable in malaria and mercury in syphilis; namely, that these two drugs are homœopathic to these diseases. This is admitted in such works as Potter's "*Materia Medica and Therapeutics*," quoting Dr. Ringer as saying that "the phenomena produced by mercury are singularly similar to those which result

from syphilis; and the serious symptoms known as secondary and tertiary syphilis can be produced also by mercury."

Doubtless you are familiar with the oft-quoted courageous testimony of Von Behring, the discoverer of diphtheria antitoxin, who pleads that the word "homœopathy" should be "accorded the citizenship of medicine," and be no longer tabooed. He says, "The scientific principles of this new tuberculo-therapy," (on which he was working) "are yet to be established, just as the scientific principles of my antitoxin serum therapy remain to be explained, notwithstanding the assertion of many authors that therapeutic action of my diphtheria and tetanus antitoxins is clearly understood since the promulgation of Ehrlich's 'side-chain theory.' * * * In spite of all scientific speculations and experiments regarding small-pox vaccination, Jenner's discovery remained an erratic block in medicine till the bio-chemically thinking Pasteur, devoid of all medical classroom knowledge, traced the origin of this therapeutic block to a principle that cannot be better characterized than by Hahnemann's word 'homœopathic.' Indeed, what else causes the epidemiological immunity in sheep, vaccinated against anthrax, than the influence previously exerted by a virus, similar in character to that of the fatal anthrax virus? And by what technical term could we more appropriately speak of this influence, exerted by a similar virus, than by Hahnemann's word 'homœopathy'?"

Later on in the same address he quoted his own words in a former one, when he was criticised for thus furnishing "grist for the mill of homœopathy," saying, "Gentlemen, if I had set myself the task of rendering an incurable disease curable by artificial means, and should find that only the road of homœopathy led to my goal, I assure you dogmatic considerations would never deter me from taking that road."

In similar vein Dr. Cabot, in our own times, frankly admits the value of homœopathic principles and practice when he says: "It has been just to charge our school (the dominant school) in the past with the absence of any principle or law of therapeutics, and to contrast the order and system of homœopathic treatment with the helter skelter, 'omnium gatherum' of merely empirical methods. But the contrast is no longer just. Homœopathy has a well-defined law which has been established empirically and is constantly and properly being subjected to reverification through careful experiments. We also,

at last, after much groping and long years of work, obtained a law of therapeutics, a principle of therapeutic effort, namely the principle of immunity."

So we see that homœopathic principles have received recognition from scientific men of the dominant school from the days of Von Behring and Roux down to Cabot and Trudeau of our own times. And they have received this recognition just because scientific men realize that they are backed up by the results of scientific research.

Consider, for example, that large branch of modern medicine so enthusiastically embraced and largely practiced by our friends of the old school—the use of vaccines and serums. What principle underlies their use? There can be but one honest answer. It is the homœopathic principle. The use of vaccines and serums, from the days of Jenner down, is undoubtedly based on homœopathic law. Indeed, Hahnemann himself anticipated this method of treating disease. In the footnote to Section 56 of the *Organon*, he says: "Some are seeking a fourth method of applying remedies against disease by means of 'isopathy,' as it has been called, that is, applying the causative miasm of a disease against the disease itself." It is true that Hahnemann draws a distinction between this so-called isopathy and homœopathy; but the underlying principle, as he points out, is the principle of "*similia similibus*."

Vaccines are suspensions, in physiological salt solution, of pathogenic bacteria whose vitality has been destroyed by heat. Serums are the liquid portion of the blood of animals that have been treated with gradually increasing doses of bacterial toxins, or attenuated or killed cultures of the organisms themselves. The successful use of either serum or vaccines in practice depends on the homœopathic principle. The serum employed is a diluted toxin of the disease-producing germ. In physiological doses it does not cause the identical disease, but is capable of inducing symptoms similar to it. So with vaccines. They don't produce the disease itself from which the bacteria are derived. But they produce a condition similar to it, and by developing a state of increased vitality produce an immunity to the disease. And both act according to the law of similars. The first requirement of any antigen is similarity. The "opsonic index," to use the term of Wright, is raised by the administration of a serum or vaccine that is capable of producing a condition closely simulating the disease

in question. The anti-typhoid vaccine introduced into the healthy body will produce, not typhoid fever, indeed, but a condition closely simulating it, of a mild type, and so producing immunity.

"Corresponding to the time of development of anti-bodies in prophylactic vaccination," says Callison, "in the first eight or ten days of an attack of typhoid there is a constant increase of temperature and aggravation of all symptoms. With the decline of the temperature to normal there is an increasing quantity of anti-bodies present in the blood, which may be demonstrated for long periods thereafter. From this correspondence in time between the clinical symptoms and the anti-bodies, in an attack of typhoid fever, and the development of anti-bodies and immunity in prophylactic vaccination, it seems only proper to assume that recovery from typhoid and the development of immunity in prophylactic vaccination are brought about by *a similar mechanism*, and that the *prophylactic vaccination is an artificial, controlled process*, which occurs naturally in an attack of the disease." If that is not a good homœopathic explanation, what is it?

To quote Cabot once more: "The poison of tuberculosis which can produce some of the symptoms of tuberculosis is applied for the cure of tuberculosis through the production of immunity, or resisting power in the tissues. Surely (he adds) this is a case of *similia similibus curantur*, as homœopathic writers have pointed out. The use of bacterial vaccines in infectious diseases, recently produced by Wright, is distinctly homœopathic."

Much work is now being done in the study of the opsonic index and the effect of homœopathic remedies on it; and the investigations of laboratory workers are showing more clearly every year that the principles enunciated more than one hundred years ago by Samuel Hahnemann were not only far in advance of his time, but true, according to the latest science.

So much for the testimony of modern research as to the truth of the homœopathic law.

II. Another cardinal principle of homœopathy now pretty generally admitted as sound and being proved more and more every day as scientific, is the principle of the smallest possible dose—the infinitesimal dose, if you please—to effect a desired result. It wasn't so long ago that the infinitesimal dose was derided. But that is no longer the case. In fact, it wouldn't

be difficult to prove from old school authorities that the minute dose not only has dynamic power, but is efficacious therapeutically. It is no longer necessary to defend the infinitesimal dose. Science has proven the might of the infinitesimally small. To quote the *London Lancet*:

"We know what infinitesimally small quantities of certain substances will put an end to the great vital processes, and we know also how endless appears to be the action of enzymes or ferments which render food assimilable so that the same vital processes are sustained. A thirtieth part of a gram of aconite will kill the human organism; one part of an enzyme will transform 100,000 parts of cane sugar into invert sugar; the enzyme of malt will convert a thousand times its weight of starch into sugar, and so forth. Nor is the enormous action of infinitesimally small quantities confined to the organic or organized world. Even certain materials devoid of life are found to exert a similar action. Platinum, for example, in the colloidal state, is capable of decomposing 1,000,000 times its weight of hydrogen peroxide into water and oxygen, and then remaining as strong and as active as ever. Perhaps the most remarkable fact in connection with the extraordinary vitality of colloidal platinum is that its energies are at once paralyzed by such ordinary animal poisons as prussic acid, corrosive sublimate, or sulphuretted hydrogen. The platinum may thus be said to be poisoned, and such a small quantity as one millionth of a grain of prussic acid is sufficient to prevent this great transforming power. To give another example of the decided effect of minute traces of various substances it has been found that certain water organisms are destroyed in water contained in a copper vessel, and yet the quantity of copper present is only one part in a 1,000,000,000 parts of water. Such effects are impressive and they are calculated to impress us still more when we contemplate the number of processes going on in the human machine, which are dependent upon the action of small things. The great processes of oxidation depend upon small things; the small amount of haemoglobin iron in the haemoglobin probably controls its oxygen-carrying property. The minute amount of arsenic and iodine in the thyroid gland probably plays a role of great importance; the enzymes are mighty and the atom also."

But modern science has gone further than the atom, which was formerly the smallest division of matter recognized. Now

we recognize a state of still more minute subdivision of matter, namely, the "ion." As Dr. Copeland says: "In the theory of dissociation of molecules, the laboratory of physical chemistry has scientifically proven the value of the infinitesimal. As interpreted by this theory, a chemical, technically an electrolyte, when dissolved, is dissociated into particles smaller than atoms and known as ions. The more dilute the solution, the greater is the dissociation and consequently the atoms are less in number and the ions increased. In a solution infinitely dilute, the dissociation is absolute, and the chemical is present only in a state of ionization."

Professor Jones, of Johns Hopkins University, states that "perhaps the best illustration of the almost unlimited divisibility of matter is furnished by some of the aniline dyes, or by fluorescein, where one part is capable of coloring or rendering fluorescent at least one hundred million parts of water." This corresponds to our eighth decimal solution. "It is easily seen then," continues Dr. Copeland, "that complete ionization is possible only in infinite dilution. Not only is this true in theory, but also the researches of the chemist seem to prove it."

The wonderful properties of radium also prove the might of the infinitesimally small. The emanation from a tiny particle of radium, placed in a glass tube and heated, while absolutely infinitesimal, would yet, if mixed with a million million times its own volume of air, so influence the whole volume as to make the total mixture possess the properties of the original radium. "There lies latent," says Struth, "in every atom of this emanation from radium a quantity of energy absolutely gigantic."

Similarly Dr. Alfred Robin, of Paris, after careful experiments with exceedingly minute doses of gold and silver and platinum testifies that these "almost infinitesimal doses are endowed with very great activity." And he concludes that "such metals, acting in doses which therapeutics considered heretofore as ineffectual and useless, by making a profound impression on some of the chemical processes of life whose deviations are connected with many morbid conditions, are probably destined to take an important place among the remedies of functional therapeutics." In homœopathic practice they have already long taken such a place.

When it comes to the clinical application of these and similar facts to disease, you are all familiar with the history of

the use of tuberculin in the treatment of tuberculosis, and the marked change in the size of the dose. Originally much larger doses were used, but owing to unfavorable results, the dose was gradually reduced until now really infinitesimal doses are used. When Dr. Trudeau began to use tuberculin some twenty-five or thirty years ago in the treatment of tuberculosis, he used as much as 10 mg. Later the dose was reduced to 1 mg., then to half a mg., while now treatment is begun in non-febrile cases, with one-ten-thousandth of a milligram, and in febrile cases with one-one-hundred-thousandth of a milligram.

Speaking of this experience Dr. Cabot well says: "The revival of tuberculin therapy within the past ten years, after its abandonment about 1890, illustrates the victory of another homœopathic doctrine; namely, the utility of very minute doses. For what fixes these infinitesimal doses? Precisely the homœopathic principle."

So we see that both in theory and practice the once ridiculed minute dose of homœopathy has been vindicated both by the research of the laboratory and by clinical experience. All modern research reveals and confirms the potency of the infinitesimal.

III. Another cardinal principle of homœopathy has been vindicated at the same time by these and similar experiments: namely, the wisdom of using the *single remedy*. The laboratory has shown the infinitely minute processes of life, as carried on by microscopic cells. It has shown the infinite divisibility of matter. It has shown that the more finely divided a remedy is, when given for therapeutic effect, the more certain that effect is. It has shown that there are opsonins for every microbic disease, and only the opsonins for the particular disease respond to the toxin of the infecting microbe. And, as Dr. Copeland remarks, the laboratory, in these conclusions, points out a beautiful argument for the single remedy and its accurate scientific selection. He says: "Hahnemann, perhaps, could not explain why the single remedy, for which he contended so vigorously, was the scientific prescription; but with present knowledge it is explainable. Chemical reactions are definite and positive. An unsatisfied equation cannot be completed by the addition of any wandering chemical, which, by haphazard chance may come within its reach. A remedy prescribed 'on general principles' by random and aimless methods, may, by accident, possess within itself such a component as to permit

it to join in unfortunate combination with the unsatisfied cellular element. * * * It may prove so miserable an alliance as to result in violent infelicity. * * * More likely it results in nothing more than damage to remote cells having an affinity for the drugs administered. * * * This is undoubtedly the effect of administering material doses." (Especially if those doses be a mixture of several drugs.)

So the contention of Hahnemann that only a single remedy should be prescribed for a given case is vindicated by the laboratory and by clinical experience. Polypharmacy, even in the dominant school, is a dead issue—relegated to the scrap heap. Scientific physicians of all schools are coming more and more every day to prescribe the single remedy and in the smallest dose that will produce the desired effect. Of course, men will always differ as to just what that dose should be; but compared with fifty or twenty-five years ago, even our old school friends have traveled far from the massive doses and the polypharmacy of those days toward the scientific prescribing of the single remedy and in comparatively minute doses. The homœopath can certainly afford to "stand pat" on his principles—nay, he can smile and rejoice as he sees the trend of the dominant school toward homœopathy both in theory and practice.

IV. Still another homœopathic principle, introduced by Hahnemann, has been vindicated by modern laboratory methods; namely, the wisdom of "proving" drugs on the healthy human body in order to learn their physiological effect and the affinity drugs have for certain tissues. Until Hahnemann introduced this systematic "proving" of drugs on healthy human beings of various types, the medical profession was largely dependent, for its knowledge of the physiological action of drugs, upon cases of disease or accidental cases of poisoning or upon experiments on the lower animals. We have learned much, to be sure, from this latter class of experiments and homœopathy has no quarrel with them—nay, uses these results in common with all schools. But modern investigators are coming more and more to acknowledge that the most scientific and accurate method of learning the physiological effects of drugs on the body, and their particular sphere of action, is the method introduced by Hahnemann over a century ago—the method of "proving" drugs on the healthy.

Hirschfelder, of Minneapolis, a well-known teacher of

pharmacology, has taken the advanced but Hahnemannian position not only that observation of drug action on healthy human beings is necessary, but that students should acquire a knowledge of *materia medica* from *experimentation upon themselves*. And Meltzer, of New York, states that the "pharmacologist should keep in mind that one and the same drug may have a profound effect on pathologic states and have no effect whatever in a physiological condition. An antipyretic may reduce a temperature (pathologic) from 105 degrees to 99 degrees F., but it will not be able to reduce the temperature even by one degree, when administered to a normal individual. You may give a large dose of alcohol to an infected patient, without producing any signs of intoxication, while only a small fraction of that dose may cause intoxication of a healthy individual." Pretty good homœopathic doctrine that, and proving that Hahnemann's methods were scientific and ultra-modern.

V. As a corollary to this, another homœopathic principle has been vindicated; namely, prescribing according to "the totality of the symptoms." Symptomatology as a basis of therapeutics is a principle that today has few opponents among the leaders of medical thought. On the contrary, Hahnemann's method of accurately ascertaining the field of action of each drug through its symptomatology and prescribing therapeutically according to the totality of the symptoms is a strictly scientific and up-to-date method, according to the latest authorities. Had the author of Wood's Therapeutics, who wrote not so many years ago, "The childish absurdity of treating symptoms by any such law as *similia similibus curantur* is at once apparent"—had Wood really read and digested Hahnemann's own words, instead of showing himself childishly ignorant of Hahnemann's teaching, he would have realized what the most modern teachers accept: namely, to use the words of Hahnemann himself, "In a disease presenting no manifest exciting or maintaining cause for removal, nothing is to be discovered but symptoms." From this incontrovertible truth, that beyond the totality of the symptoms there is nothing discoverable in diseases whereby they could express their need of a remedy, it undeniably follows that prescribing on the totality of the symptoms is scientific and "regular." This was rather humorously shown by the homœopath who, representing himself as a patient, wrote to twenty well-known physicians, ten of the dom-

inant and ten of the homœopathic school, enclosing a fee, describing his condition and symptoms identically in all letters, and asking for a prescription. He gave all the symptoms in his supposed case. The answers were illuminating. Every one of the homœopaths prescribed the same remedy, while the prescriptions of no two of the old school physicians were alike, and many differed very widely. This showed the lack of any law of cure to guide the latter and the rather haphazard prescriptions that resulted, while all the homœopaths prescribed the identical remedy. In the light of such a test it might well be questioned, which is the "regular" school and who is the "regular" practitioner. Certainly when it comes to prescribing according to a therapeutic *law*, especially in a doubtful case, whose diagnosis is obscure, owing to contradictory symptoms, the homœopath has the advantage. Our old school friends, unless they can make a diagnosis, are largely at a loss what to do; but the homœopath even though he can't make a positive diagnosis—a most desirable thing, of course, and a thing he should always do, if possible—can still prescribe accurately and scientifically on the totality of the symptoms and his knowledge of the pathogenesis of the indicated remedy.

VI. This leads us to the last principle of homœopathy of which we shall speak and which has been vindicated by modern science; namely, that as physicians we are treating primarily the *patient* and *not the disease*. Hahnemann in 1813 defined disease as a *disturbance of function*, when he wrote that "as the condition of the organism and its healthy state depend solely on the state of life which animates it, in like manner it follows that the altered state, which we term disease * * *" is but a manifestation of that altered function. This doctrine was confirmed nearly a century later by Virchow when he defined disease as "life under altered conditions." With this more scientific conception of disease men began to care less for the exact nomenclature given to this disturbed function, called disease, and more for the altered vitality of the patient. Less attention was given to the morbid state and more to the personal equation of the patient. Pathology became a branch of biology. And as Hahnemann's theory of psora became better understood and as physiology and biology have advanced, his teaching has been found to be in strict conformity with modern scientific conclusions. So today, all schools of medicine, at least in their *therapeutic* efforts, are treating, not the name of a mor-

bid process called disease but the individual patient himself. "Individualize your case" is the injunction of all successful therapists.

As Dr. Korndorfer points out, "Sajous has shown that the autoprotective organism is constituted of the pituitary, adrenals, thyroid, and parathyroids—and we might add of all the other ductless glands—and that any failure in any of these secretions leaves the body to that degree exposed to the various forms of infection. In other words the autoprotective power of the body depends upon the normal development of the functional activity of these several organs."

To take a single illustration of how this dovetails with Hahnemann's teaching, the latter's description of psora when compared with the modern picture of deficient thyroid function, is almost identical, as Dr. Korndorfer points out. Thus again Hahnemann's insistence upon knowing the patient and his vital power, as well as the pathology of the disease, is vindicated by modern research. What Hahnemann had in mind was just what modern science emphasizes—the prime importance of vitality, of life, of the patient himself, and the secondary importance of pathology and the disease process.

We have thus hastily and briefly reviewed some of the cardinal principles of homœopathy, and have seen how modern research has vindicated them, as shown by the testimony of well-known authorities. No doubt you are familiar with the facts that have been called to your attention; but it is well now and then to recall them to mind, that our faith in the therapeutic principles for which the homœopathic branch of the profession has always stood may be strengthened. As Dr. Copeland says in his excellent and thoughtful monograph on "The Scientific Reasonableness of Homœopathy"—a little book that ought to be in the library of every one of us—"If never before, now certainly the homœopathic physician may hold up his head and proclaim to all therapists, 'I am king!' The infinitesimal dose, the law of similars, and the single drug comprise the subjects of the world's (medical) thesis."

I cannot better conclude this already too extended paper than by quoting the closing words of Dr. Copeland's book. After quoting the American Institute's definition of a homœopathic physician as one "who adds to his knowledge of medicine a special knowledge of homœopathic therapeutics; all that pertains to the great field of medicine is his by tradi-

tion, by inheritance, by right," the doctor triumphantly exclaims:—"They who have not tried homœopathy have not half tried to get well. * * * The founder of this system of therapeutics was born a century and a half ago. He lived in an epoch of superstition, he practiced during the dark ages of medicine, he knew nothing of the modern laboratory idea. Yet this gigantic intellect was capable of formulating a system of therapeutics so accurate in its essential parts that the rest of the scientific world has adjusted, and readjusted itself until now it snugly enfolds and perfectly fits every feature of the homœopathic doctrine. Study the modern ideas of disease and the morbid processes as they are now understood, delve in physical chemistry as it is taught in every university of the world, listen to the forensic eloquence of the physicist, the chemist, the physiologist, the pathologist; then take from its shelf the 'Organon of the Art of Healing' written one hundred years ago by one Samuel Hahnemann, and it will be found that the notes of all these latter-day scientists are so attuned that when that voice of a century ago sings its lay to the modern music, there is not a suspicion of discord, but in perfect sweetness the whole temple of science is resonant and reverberant in one symphony of perfect harmony."

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REPEATED SMALL INJECTIONS OF BLOOD IN PERNICIOUS ANAEMIA—
 Waag claims excellent results through the use of frequently repeated small doses of whole blood, injected hypodermically, in pernicious anaemia. The advantages claimed for the method are simplicity and freedom from severe reactions. The technique of the method is simple, involving as it does only the subcutaneous injection into the thigh of 5 c.c. of whole blood, taken from the donor. This is repeated every two or three days. This method of treatment is too recent to speak of permanent results, but is worthy of trial in the absence of the generally approved method of transfusion.—
Minichener Medicinische Wochenschrift.

**SUBDIAPHRAGMATIC ABSCESS, WITH REPORT OF TWO CASES
FOLLOWING APPENDICITIS**

BY

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(Read before the Surgical and Gynecological Society of the American Institute of
Homœopathy, June, 1920.)

A SUBPHRENIC abscess is a collection of pus whose walls are partially formed by the under surface of the diaphragm. As this muscle is in contact with nearly all of the viscera of the upper abdomen the various cavities which may form differ greatly in size, shape and location.

In a masterly paper Barnard reviewed 76 cases and described the anatomy so thoroughly that I can do no better than quote freely from his article. Owing to the cruciform arrangement of the falciform and the coronary and lateral ligaments the peritoneal surface of the diaphragm is divided into two parts, a right and a left, and each of these again subdivided into a larger anterior and a smaller posterior portion. In addition to these four areas there are two spaces which lie outside of and behind the peritoneum. That on the right side is between the layers of the coronary ligament where the liver is attached to the diaphragm by cellular tissue, and the other consists of the perinephritic tissue around the upper pole of the left kidney. These various fossae may be classified as follows:

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|---------------------|---------------|
| A. Intraperitoneal. | |
| I. Right. | 1. Anterior. |
| | 2. Posterior. |
| II. Left. | 3. Anterior. |
| | 4. Posterior. |
| B. Extraperitoneal. | |
| | 5. Right. |
| | 6. Left. |

1. A right anterior intraperitoneal abscess is situated between the right lobe of the liver and the diaphragm and is limited to the left by the falciform ligament, posteriorly by the right lateral ligament and anteriorly by a line of adhesions which varies according to the etiology. When the infection is from below and the outside, as from the appendix, the anterior margin of the liver becomes adherent to the diaphragm

and walls off the pus. These adhesions prevent the liver from descending and the abscess from reaching the anterior abdominal wall, so that signs of inflammation in this area are few or absent. On the other hand, when the infection is from below and the front, as from a gastric or duodenal ulcer, the adhesions are formed by the great omentum and transverse colon, the liver is pushed upward and backward and the abscess bulges in the epigastrium and the right hypochondrium.

2. A right posterior intraperitoneal abscess occupies the subhepatic space, a triangular fossa whose base rests against the right lateral abdominal wall and projects just below the last rib. This abscess is limited by adhesions of the liver and the anterior abdominal wall to the stomach, the great omentum and the transverse colon. Posteriorly and above it extends to the right lateral ligament and the transverse fissure, its posterior wall being the upper part of the right kidney and the lower part and crus of the diaphragm. At its base this fossa is capacious, it holds about a pint, and is in communication with the right anterior fossa and the lateral gutter which lies between the ascending colon and the parietal wall, while on the left side its apex is but feebly shut off from the left anterior subphrenic space.

3. A left anterior intraperitoneal abscess extends from the diaphragm to adhesions between the stomach, omentum and anterior abdominal wall. The falciform ligament limits it sharply to the right, while the left lobe of the liver is forced downward and to the right and the spleen to the left. This fossa communicates not only with a left subhepatic space and the left lateral gutter, but also with another fossa which Barnard first described and which lies deeply in the lumbar recess between the vertebral column and the descending colon and communicates with the recto-vesical or recto-uterine pouch.

4. A left posterior intraperitoneal abscess is in the lesser peritoneal cavity which runs backward and to the right from the liver, stomach, transverse colon and spleen. Adhesions usually narrow this space into a small cavity which extends upward and backward and encroaches upon the diaphragm between the Spigelian lobe of the liver and the crus of the diaphragm. The communication between the lesser peritoneal cavity and the subhepatic space through the foramen of Wins-

low is so narrow that, as a rule, it is sealed at the first outbreak of inflammation.

5. A right extraperitoneal abscess is in the cellular tissue between the layers of the coronary and other ligaments of the liver, the major portion lying on the upper and back part of the viscus.

6. A left extraperitoneal abscess usually presents in the loin as a lumbar abscess. While the cellular tissue is abundant in this region there is no large space beneath the left side of the diaphragm so that it is only occasionally that the pus strips the peritoneum from the muscle sufficiently to form a cavity.

In Barnard's 76 cases the right anterior space was affected 27 times and in 16 of them one or more other fossae were invaded. The right posterior space was involved in 10 cases but in all but one the anterior fossa was also affected. The left anterior fossa was infected 30 times and in 26 it was the only one containing pus. The lesser peritoneal sac was the seat of abscess three times. The right extraperitoneal space was involved in 19 cases, in 6 of which other abscesses were present, but the left extraperitoneal space contained pus only 4 times and in none of these cases was there a second abscess.

It is difficult to estimate how often a subphrenic abscess occurs, but there can be little doubt that it is sometimes overlooked and the number of cases that are being reported from time to time proves that it is far from rare. Within fifteen years after Volkmann first proved the feasibility of operating these patients, Maydl had collected 179 cases, of which 74 had been operated, and during the next ten years Perutz collected 208 more, of which 155 had undergone operation. In 1909 Piquand reviewed 980 cases and Lance 943. Since these papers numerous individual cases have been presented but no effort has been made to include them into one series. Barnard's review covered 76 cases which occurred in the London Hospital from 1900-1907, 64 which were operated; Weber found 9 in 600 cases of appendicitis in Sonnenburg's clinic; Treeves 6 in 1000 cases of appendicitis and Ross in 3391 consecutive cases of acute appendicitis in the Lankenau Hospital discovered 31 instances of subphrenic abscess.

ETIOLOGY AND PATHOLOGY.—The cause of subphrenic abscess is not obscure for it may occur with any abdominal inflammation and occasionally through metastasis from points

outside the abdomen. The reports show the majority to have followed lesions in the organs of the upper abdomen, but appendicitis is a very important factor in its production. In 811 cases reported by Maydl, Körte, Perutz, Barnard and Grüneisen, the principal seats of origin were as follows: Stomach 227, appendix 194, liver and bile passages, including 33 hydatid cysts, 104, thorax 35, kidney 32, and duodenum 20.

The manner in which the subphrenic spaces become infected from the upper abdominal viscera is easily perceived for these organs lie in immediate contact with them and the various fossae are largely involved according to the situation of the lesion. A perforation of the stomach will usually spread into the left anterior space, but if the opening is close to the pylorus the right anterior space is more likely to be invaded, and if the posterior gastric wall is the seat of the lesion an abscess in the lesser peritoneal cavity is the result. An abscess of the liver may open into one of the intraperitoneal fossae, but in the majority of cases it will spread into the right extraperitoneal cellular tissue.

Infection from the more distinct foci may occur in several ways: (a) As a part of a systemic pyemia; (b) as a part of a general purulent peritonitis with suppuration in various parts of the abdomen; (c) through the portal circulation by way of the liver and (d) as a localized process from direct extension by way of the peritoneum or through the lymphatics. We will not discuss the first three as in them the subphrenic abscess is an incident rather than the actual seat of the septicemia which usually results in early death.

The lymphatics may carry the infection as a lymphangitis or as a diffuse cellulitis. The vessels involved in the former are the retroperitoneal lymphatics of the posterior abdominal wall or those which accompany the superior epigastric vessels along the anterior wall to the mediastinum. Both chains are in connection with the right extraperitoneal space. A particularly severe form of infection is the diffuse cellulitis of the retroperitoneal tissue. This occurs most commonly from a retroperitoneal appendix or when adhesions have walled off an abscess and the infection has spread beneath the peritoneum. In either case suppuration travels upward to the extraperitoneal surface of the liver and from there may extend forward between the layers of the falciform ligament to the epigastrium, where it can be incised without opening the peri-

toneum. As adhesions do not develop between the diaphragm and the liver, the latter will be depressed and its lower border may reach below the level of the umbilicus. On account of the direct contact between the pus and the muscle, perforation into the pleural cavity occurs most frequently in this form. Infection of the perirenal tissue or rupture of a posterior duodenal ulcer are, next to appendicitis and liver abscess, its most frequent cause.

Intraperitoneal abscesses are decidedly more common than extraperitoneal. Though an occasional intraperitoneal abscess has followed an attack of appendicitis which subsided without requiring operation, the origin of these localized collections of pus is almost invariably a more or less diffused, purulent peritonitis which travels upward by one of several routes. When a patient is lying flat on his back the abdominal cavity is divided into an upper and a lower pouch by the kidneys and the heavy muscles of the loin. This elevation acts as a water shed so that an exudate above it will gravitate up behind the liver, but if below the flow will be into the pelvis. In the center of the abdomen the extension is limited by the small intestine and its mesentery and here multiple abscesses may form between the intestinal coils. On either flank, however, the passageway is more open and pus can easily spread up along the colon, usually through the lateral gutters which lie between the colon and the abdominal wall and open into the subhepatic spaces. At the beginning the pus is free in the peritoneal cavity but after several days adhesions are thrown out and at the end of ten days or two weeks an abscess with firm walls is present. The pus while free may extend into several fossae and become walled off in more than one and this probably accounts for multiple abscesses more often than does the rupture of an old abscess into a fresh cavity.

The contents of these abscesses are a thick, very offensive, yellow pus and a large percentage of them contain gas, due either to communication with a hollow viscus or from the action of gas producing bacteria. The abscesses from lesions of the liver or appendix rarely contain gas, on the other hand, it is frequently met in those from the stomach or duodenum.

Before considering the symptoms I would like to present two cases which followed appendicitis, the first was in the

right extraperitoneal space and the second in the right anterior fossa.

CASE 1.—J. E. D., male, 26 years. Referred by Dr. A. R. Garner. An appendiceal abscess in the lateral gutter, with free pus surrounding it, was drained with iodoform gauze through an incision in the right semilunar line. Condition improved considerably for three days when temperature began to rise and on the seventh day had reached 102 degrees. Under ether the drain was then removed with evacuation of considerable thick, stercoral pus and the wound partially sutured. Progress was satisfactory for two days, the evening temperature falling almost to 100 degrees, when the fever again gradually increased. There was little pus in the wound but the patient's condition grew steadily worse. He became weak, restless, excitable and lost much weight. The spleen was a little enlarged but the liver appeared to be normal in size. The temperature gradually reached a daily maximum of almost 104 degrees, but the pulse, while weak, remained under 100. At the end of seven weeks the lower edge of the liver was depressed three inches and a tender fluctuating mass could be made out in the lumbar region below the twelfth rib. The general condition of the patient was exceedingly bad, he was greatly emaciated and weakened and his pulse was rapid and thready. Incision parallel to the twelfth rib disclosed a sinus between it and the eleventh rib extending upward to a cavity beneath the diaphragm, from which a large amount of pus was evacuated. About two inches of the twelfth rib was resected without opening the pleura. Improvement was rapid, convalescence uneventful and the patient left the hospital within a month.

CASE 2.—E. E., female, 12 years. Referred by Dr. J. A. Brooke. This patient had had appendicitis for ten days before consulting her physician, and was a desperately sick child with temperature of 101 degrees, pulse 120, rales in both lungs and abdominal signs of a general peritonitis, which centered in the right iliac fossa. Immediate operation disclosed a large quantity of thin, yellow, offensive pus in the general peritoneal cavity and a perforated and gangrenous appendix which was delivered from the lateral gutter with much difficulty. Improvement was marked and a post-operative temperature of 103.8 degrees had subsided to 100 degrees within four days. At that time the pulse was 120, the respirations

28, there was dullness over the bases of both lungs, but a troublesome cough had subsided and the patient was bright and cheerful. On the fifth day her temperature had reached 101.4 degrees, and on the sixth day had risen to 102 degrees. By the eleventh day the patient was profoundly septic, very nervous and irritable and the temperature ranged from 99 to 103 degrees. The upper abdomen was not tender and no enlargement of the liver could be made out. The left lung showed broncho-vesicular breathing and dullness near the base. Dry rales were present in the right chest and posteriorly there was dullness below the seventh rib, which increased to flatness at the base. In this area the breath sounds were distant or lost. While the pulse was 120 and weak the respirations remained under 30. The X-rays showed a dense shadow blending with that of the right diaphragm and extending up to the seventh rib. Haziness of both lungs suggested a broncho-pneumonia. A diagnosis of subphrenic abscess was made and under gas anesthesia aspiration disclosed a thick, stercoral pus at the level of the eighth rib in the posterior axillary line. About two inches of this rib were resected. The pleura contained a large quantity of serous fluid. It was impossible to suture the two layers of the pleura so the cavity was walled off with iodoform gauze, the diaphragm incised and a large abscess between it and the liver was evacuated and drained. Immediate improvement took place, but the patient's general condition was not satisfactory as a moderate septicemia persisted. Examination of the chest failed to disclose evidences of empyema until almost two months later, when dullness suddenly developed over almost the entire right chest and the X-rays disclosed a homogeneous shadow in this area. Resection of the sixth rib disclosed the pleural cavity contained a large quantity of pus with a gangrenous, rather than a stercoral, odor. Convalescence quickly followed this operation and the sinus closed in six weeks.

SYMPTOMATOLOGY AND DIAGNOSIS.—There is no pathognomic symptom of subdiaphragmatic abscess. Some authors, among them Litten and Jendressick, believed they had discovered such positive signs, but, unfortunately, the experience of other observers failed to verify their claims.

As these abscesses are always secondary the first step in the diagnosis is to recognize the primary focus. This is usually

self-evident, but at other times it is obscure. The history often acts as a guide, but it must be complete and thorough if an occasional case is not to be overlooked. The recognition of a slight attack of appendicitis which cleared up spontaneously some weeks before, or mild symptoms of a chronic gastric ulcer with little evidence of perforation have more than once led to a true conception of the condition. The mode of onset varies a great deal. The symptoms of the abscess may be continuous with those of the primary disease, but usually there is a distinct intermission between the two, during which period there may be a partial or complete remission of the symptoms of sepsis. This remission ordinarily covers only a few days, but Eisendrath reported a case which had evidently followed the drainage of an appendiceal abscess one year earlier. The temperature gradually increases and assumes a remittent type with well marked depressions in the morning and corresponding sharp elevations in the afternoon, typically a septic fever. Accompanying this fever are the usual signs of a profound septicemia, with emaciation, asthenia and nervous irritability often predominating. Localized pain, sudden and severe or gradual in onset, is probably the most valuable early subjective symptom and is present in the majority of cases. The pulse accompanies the temperature and is characteristically rapid and soft.

The physical signs in the abdomen depend upon the size and location of the abscess. The anterior abdomen may be the seat of tumefaction from one in any fossa except the left posterior extraperitoneal. An anterior intraperitoneal abscess will develop as a tender, triangular swelling in the epigastrium and the right or left hypochondrium, depending upon which side of the falciform ligament it is located. In those containing gas tympany in the epigastrium will be noted and a change in this tympanitic area may be recognized to accompany a change in the patient's posture. As already mentioned adhesions between the diaphragm and the anterior margin of the liver will prevent a right anterior abscess which is infected from behind and externally from reaching the anterior abdominal wall. If an abscess in the right extraperitoneal fossa extends sufficiently far forward it will depress the liver and present in the epigastrium between the layers of the falciform ligament. Suppuration in the subhepatic space will cause a tender mass from the epigastrium to the right wall of the

abdomen with its lower border directed obliquely downward and outward almost to the crest of the ilium. Distention of the lesser sac may give the appearance of an inflammatory cyst between the liver and stomach, between the stomach and transverse colon or beneath the latter, its position depending upon the patency of the cavity between the layers of the omentum.

A lumbar abscess may result from infection of the right posterior intraperitoneal fossa or of either of the extraperitoneal spaces. The pus may work downward and backward and cause a tender, edematous, perhaps fluctuating, swelling below the last rib. This is the usual course of the left extraperitoneal type, but in the others such a fortunate outcome can hardly be anticipated and should never be waited for.

On account of the intimate relationship of the thoracic and upper abdominal cavities the symptoms of inflammation in one will closely resemble a similar condition in the other. Elevation of the diaphragm causes pressure at the base of the lung with a congestion and diminution of the amount of air reaching it. The abscess beneath produces lessened respiratory motion of the upper abdomen, dullness, diminished or absent breath sounds and vocal fremitus. The edge of the dullness is convex upward and there may be a sharp line of demarcation between the dullness below and free respiratory movements of the lung above. Cough, usually with little expectoration, is not infrequent, but pleuritic friction sounds are only occasionally heard.

The pleura may be infected by contiguity or by perforation. In the latter case the result may be a walled off collection of pus or diffuse empyema. The perforation from an intraperitoneal abscess is more likely to occur near the dome of the diaphragm and adhesions between it and the lung may readily form. Such an abscess may break into the lung and evacuate itself through the bronchus. Perforation of an extraperitoneal abscess occurs in a larger percentage of cases and, as it takes place close to the periphery where excursions of the lungs are less frequent, the chances of localization by adhesions are less. The possibility of a localized pleural abscess masking a deeper collection of pus should be borne in mind and if drainage of such an abscess does not promptly relieve the symptoms, careful search should be instituted for one beneath the diaphragm. Without perforation the pus in the empyema

usually is less virulent and offensive than that of the subphrenic abscess.

It is difficult to estimate how often pleurisy, purulent or serous, is a complication, as a number of the reports do not discuss this feature in detail and in many patients the thoracic cavity was not explored. In Ross' series 21 cases came to autopsy and in only 6 was pleurisy found, but this is a much lower percentage than that given by most authors. A study of the various statistics would indicate that pleurisy occurs in at least 50 per cent. of the cases at the time of operation or autopsy. An increase in the amount of pleural exudate may occur very suddenly, as was exemplified in our second case and in one quoted by Barnard. Even fewer data are obtainable as to the pulmonary conditions but gross lesions of the lung do not appear to be common. Though the pericardium is equally as close to many of these abscesses as the pleura it is seldom affected.

When symptoms of pleurisy supervene upon those already mentioned it is impossible by means of physical diagnosis to differentiate the two conditions unless the abscess contains gas. In that case there will be from above downward lung resonance, pleural dullness, tympany from the gas and, finally, a second area of dullness. Change in the position of the patient may cause a recognizable change in the position of the tympany as it will always lie above the lower stratum of fluid. If the pleura is empty the upper level of dullness will be absent.

The X-rays may be of much aid, especially with the presence of gas or fixation of the diaphragm, but their findings, while undoubtedly valuable, are hardly exact enough to furnish a definite diagnosis in a large percentage of the cases.

The most certain and exact method of discovering the presence of a subphrenic abscess is aspiration. This should be done with a large caliber needle for the pus may be so thick and tenacious that it can be withdrawn only with difficulty. Repeated attempts may be necessary to locate the abscess and the chest should be explored from the sixth interspace downward, beginning in the scapular line and working forward. The needle must reach a depth of three inches in order to pass through the diaphragm and even then a small, centrally located abscess may be missed. According to Fuerbringer the needle, when passing through the diaphragm, will be carried

up and down by movements of this muscle when it is not paralyzed.

Inflammation of the liver is the other great diagnostic stumbling block and differentiation between an abscess near its upper surface and one between it and the diaphragm may be impossible, even with operation. Enlargement of the liver takes place at the expense of the abdominal cavity as there are no adhesions to bind it against the diaphragm. This enlargement is tender, dull and its lower margin regular and palpable. Such symptoms as jaundice, chills and profuse sweats are more in evidence with hepatic than with subdiaphragmatic lesions. Pus in a hepatic abscess is not foul, is chocolate colored and contains liver elements which should be sought for under the microscope.

In our experience the septicemia from a subphrenic abscess has been more virulent and the course of the disease more rapid and constant than from empyema, hepatic abscess or pyelephlebitis, especially in respect to facial expression, emaciation, mental and nervous irritability and physical weakness. The temperature curves showed marked remissions, were irregular, but a daily rise (102 to 104 degrees) was constantly present and the pulse was rapid and weak with easily excited exacerbations. The pulmonary symptoms were not sufficient to account for the severity of the general condition and the same was true of the abdominal findings. It was upon this resumé that we based a pre-operative diagnosis of subphrenic abscess in the second case.

The treatment must necessarily depend upon the type of abscess and the length of time it has persisted. During the early stages the pus is not confined by adhesions and drainage of the lateral gutter through the abdomen or loin may be all that is necessary. When a purulent appendiceal exudate is in the lateral gutter a free outlet for it should be established. The lower end of the lateral gutter in some patients is little more than a moderate depression; in others the muscular ridge is so prominent that a deep, distinct fossa is formed, in which fluids can easily be retained and drainage of the pelvis alone will not always be sufficient. Despard recites two cases in which large retrocolic abscesses formed while the abdominal incision was discharging freely.

An abscess presenting anteriorly should be explored through the abdomen. It may then be thought advisable to

secure drainage through a second incision which will avoid infecting the peritoneal cavity or to make a counter opening posteriorly.

An abscess which reaches the lumbar region can be incised through the loin and, if necessary, this incision may be enlarged upward through the lower two ribs with little danger of entering the pleural cavity. Even if the pleura extends so low the neighboring inflammation has probably caused adhesions to form between the parietal and visceral layers of the phrenico-costal sinus.

An abscess situated well up under the diaphragm will require rib resection to evacuate it properly, even though it would be possible to reach it from a lower incision. The chances of tearing the liver substance or entering a hollow viscus while breaking up adhesions in the exploration of a lumbar wound makes this route inadvisable. The dangers of a secondary empyema in an already weakened patient are obvious and several methods have been devised to avoid the production of this complication during an operation. The ideal incision is one that will open into the abscess through the chest wall and yet avoid entering the pleura. Elsberg accomplished this successfully in six patients. He advises the resection of three inches of the ninth and tenth ribs somewhere between the scapular and anterior axillary line, the portion of the ribs to be removed to depend upon the situation of the pus. The diaphragm can then be seen in the lowermost part of the wound. If deemed advisable the pleura may be aspirated, otherwise the upper part of the wound should be protected with gauze and the aspirating needle passed through the diaphragm below the pleura and using this needle as a director the diaphragm incised. Eisendrath has modified this operation by confining resection of the ribs to the space anterior to the posterior axillary line as he found it almost impossible, both in the living body and cadaver, to remove the ninth rib behind this point without dividing the pleura.

When this ideal operation cannot be carried out, and this is frequently true, a transpleural opening is the only alternative. Every effort must be bent to prevent infection gaining entrance to the unprotected pleural cavity and this may be accomplished by suturing the diaphragmatic pleura to that of the parietal wall before incising the diaphragm. When this is

impossible, walling off of the pleural opening with gauze sometimes accomplishes the same purpose.

1. Barnard: Brit. M. J., 1908, i, 371, 429.
2. Lance: Gaz. d. Hosp. Par., 1909, lxxxvii, 63, 99.
3. Eisendrath: Jour. A. M. A., 1908, L, 751.
4. Reeve: American Practice of Surgery, 1910, Vol. vii, 479.
5. Moynihan: Abdominal Operations, 1914, Vol. i, 137.
6. Despard: Annals of Surgery, 1913, lviii.
7. Ross: Jour. A. M. A., 1911, lvii, 526.
8. Elsberg: Annals of Surgery, 1901, xxxiv, 729.

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THE RELATIVE VALUE OF LABORATORY AND CLINICAL METHODS OF STUDY IN THE DIAGNOSIS OF TUBERCULOSIS.—Pottenger concludes his valuable review of this important subject as follows: "From our discussion we can see how advantageous it would have been had clinical observation kept pace with laboratory research during the period of development of our knowledge of tuberculosis; and with our knowledge brought to its present state, the one outstanding cry is for more thorough clinical study. It now offers the greater and apparently the more fruitful field. The patient should be studied more intently and his body reactions should be recognized and interpreted with greater accuracy. Without belittling in the least the magnificent work produced by the laboratory I wish to assert with emphasis that no laboratory method alone or no combination of laboratory methods will ever give the clinician a knowledge equal to that which comes from observing and analyzing the patient. Looking into the future we have an increasing confidence that clinical observation and research will be prosecuted with greater zeal, and that it will produce a better balanced science of medicine, and one which will be better able to satisfy the requirements of the patient."—*American Journal of the Medical Sciences*, Sept., 1921.

THE TREATMENT OF EMPYEMA WITH GENTIAN VIOLET.—Ralph H. Major reports twenty-seven cases treated by this remedy, with 51.8 per cent recoveries. The technique of his treatment is as follows: "The chest was aspirated by means of a Potain aspirating outfit, the fluid withdrawn and 100 c.c. of an aqueous solution of gentian violet introduced into the chest through the aspirating needle by means of a Luer syringe. This solution was allowed to remain until the next aspiration. At first a dilution of 1 to 10,000 was used, followed later by dilutions of 1 to 5000 and 1 to 1000. Later in the series the first installations were used in the strength of 1 to 5000, followed rapidly by an increase in strength to 1 to 1000. As this method was followed in a number of earlier cases by a sterilization of the pleural exudate and clearing up of the empyema the procedure was extended to all the cases coming under observation. The greater number of the cases cleared up under this treatment, there were some failures, and in a few instances it is now apparent that surgical intervention should have been resorted to earlier."—*American Journal of the Medical Sciences*, Sept., 1921.

GLEANINGS

MEDICINE

Conducted by CLARENCE BARTLETT, M.D.

THE SERUM TREATMENT OF ANTHRAX.—Regan has virtually abandoned all other treatment of anthrax excepting the general and local administration of anti-anthrax serum. He regards ordinary local measures as disadvantageous, and at times dangerous. The local injection of anthrax serum into the pustule is apparently the most effective means of local therapy, and should always be used as a supplementary measure to the general administration of serum. Anthrax serum fulfils best the points requisite for an ideal method of treatment of anthrax: (1) It is applicable to all forms and locations of the disease; (2) yields on average the lowest mortality rate; (3) is a specific measure; (4) is a safeguard against generalization of the local disease if used in time; (5) offers the least amount of scarring and deformity; (6) causes a minimum of pain; (7) demands on an average the shortest absence from employment.—*American Journal of the Medical Sciences*, Sept., 1921.

THE LOCALIZATION OF BACTERIA IN THE UPPER AIR PASSAGES: ITS BEARING ON INFECTION.—Continuing his observations on a variety of bacteria localizations in the upper air passages, Bloomfield reaches the conclusions: 1. Aside from the normal flora, bacteria do not, as a rule, grow free on the mucous surfaces of the upper air passages. 2. Special conditions are necessary to account for the presence of foreign organisms—either a local infection, or a transient invasion.—*Johns Hopkins Hospital Bulletin*, Sept., 1921.

THE SPLEEN AND DIGESTION.—From time immemorial there have been vague theories presented, tending to show that the spleen exerts an important influence on the digestive function. Inlow has given this subject a careful study in its relation to gastric secretion, by means of a careful analysis of available literature, and some personal observations of his own by splenectomy. The removal of the spleen in his experiments caused no noteworthy changes in gastric secretion, excepting a slight diminution in the quantity of gastric juice obtained. Through his experimental inquiries and a critical review of the literature, he concludes that a definite pepsinogenic function of the spleen has not been demonstrated, and that the relation of the spleen to gastric secretion is probably merely vascular.—*American Journal of the Medical Sciences*, Sept., 1921.

OIL FOLLICULITIS.—Page and Bushnell investigated skin affections due to oils, particularly machine oils, and they suggest the term "oil folliculitis," since in the case of machine oils the trouble is due to mechanical plugging, followed by inflammation and infection of the follicles. All types

of oil are liable to produce skin affections if in contact with the skin for some length of time, the oil acting as a carrier of infectious material from one individual to another, cleanliness being most important in prevention. Workmen on cutting machines should be careful to avoid contamination of the oil by saliva, and those with skin diseases should be removed from work with oils. Although oils may be sterile and free from dust when sold, they soon become contaminated after use, but by heating to 70 degrees C. for thirty minutes all dangerous pathogenic bacteria can be destroyed, and it is best to use oil which has been rendered free from dust, and especially metal particles. Waste and rags used in cleansing the hands should not be exchanged, and clothing saturated with oil should not be worn. Researches by the staff of E. F. Houghton & Co., on the "Causes of Skin Sores and Boils Among Metal Workers," show that 0.2 per cent. to 1 per cent. ichthyol contained in some oils will produce skin lesions, and oils pressed from crude solid paraffin contain an irritating substance, while lard oil may contain bacteria. Added germicides are unsatisfactory, the worker's cleanliness being the most important prophylactic, combined with daily filtration and sterilization to reduce the danger of contamination from careless workmen.—*Journal Indust. Hygiene*, June, 1921.

THE SYMPTOMATOLOGY OF LETHARGIC ENCEPHALITIS.—Holmstrom discusses the symptomatology of lethargic encephalitis, of which he has seen twenty-seven cases, with special reference to its nervous and mental manifestations. He distinguishes between the drowsy mental state of this disease and physiological sleep, pointing out that on recovery the patient often declares that he was not actually asleep, that his brain, on the contrary, was restlessly engaged all the time with a tangle of thoughts. Waking from normal sleep a person usually takes a measurable interval of time to become fully conscious, whereas in the case of lethargic encephalitis the transition from "sleeping" to being wide awake is not thus marked; all that happens is that closed eyes are opened. In all the author's twenty-seven cases more or less well-marked nystagmus was found; it was an early symptom demonstrable in the febrile stage of the disease. Sometimes it passed off before the patient became afebrile, but as a rule it persisted longer than the fever. Another early symptom was diplopia, and in two cases this was the first symptom observed by the patient. Six of the twenty-seven cases terminated fatally.—*Hygiea*, April 16 and 30, 1921.

INTERNAL HYDROCEPHALUS IN A SYPHILITIC, PROBABLY DUE TO INTRASPINAL TREATMENT.—Keidel and Moore present a case, the data of which seemed to prove their conclusion that it is one of communicating internal hydrocephalus in a neuro-syphilitic. Their argument goes to show that there is excellent reason for believing that this state of affairs followed, and was the result of, the intraspinal treatment with mercurialized serum. Thus it suggests the possible though remote danger of intraspinal therapy.—*American Journal of the Medical Sciences*, August, 1921.

DIABETES MELLITUS, SYPHILIS AND THE NEGRO.—Lemann's study of the above subject suggests to him the following conclusions: "1. There is no relation between the incidence of diabetes mellitus and syphilis; hence there is no probable etiologic relation between the two. 2. There is an

unexplained immunity of the negro race to the production of spirochetal pancreatitis just as there is an unexplained immunity of the race to the production of locomotor ataxia." With which we believe all will agree.—*American Journal of the Medical Sciences*, August, 1921.

STUDIES ON THE DOSAGE OF DIGITALIS IN CHILDREN.—McCulloch and Rupe present the following conclusions concerning the above subject: "1. Our results show that between eight and twenty kilos of body weight, or up to the approximate age of four years, children respond more rapidly to digitalis than do children above this weight and age. It would seem that older children with normal hearts require a larger amount per unit of body weight than is necessary to produce an effect in adults with heart disease. 2. There is considerable variation in the amount of digitalis necessary to bring about a response in the hearts of children. 3. We have noticed vomiting to be one of the early signs of the effect from digitalis administration, often occurring before there were any alterations in the electrocardiogram. Changes in the electrocardiogram were not constantly found in all the cases in which a digitalis effect was obtained. The most common change observed in this group of children was the appearance of a sinus arrhythmia. Alteration in the size and direction of the T wave occurred in a small number of all the cases.—*American Journal of the Medical Sciences*, August, 1921.

EDEMA OF THE GLOTTIS IN OBSCURE DEATHS.—Canavan, as the result of considerable autopsy work in sudden deaths, shows that edema of the glottis should be regarded as a very important factor. She classifies the clinical varieties of edema of the glottis as follows: 1. General anasarca. 2. Infections. 3. Tumors of thyroid or cervical region. 4. Foreign bodies. 5. Trauma. 6. Posture. 7. Neuropathic (Quinke). 8. Toxic. 9. Thermal. 10. Ischemic. 11. Irritant (gas). The causes of edema she states as follows: 1. Arterial congestion. 2. Stagnation of the blood. 3. Hindrance to outflow of blood. 4. Disturbance of capillary secretion due to changes in capillary walls. 5. *ex Vacuo*.—*American Journal of the Medical Sciences*, August, 1921.

ENDOCRINOLOGY

Conducted by AUGUSTUS KORNDORFER, JR., M.D.

THE INTERNAL SECRETION OF SANSTROM'S GLANDS. PARATHYROID HYPOFUNCTION AND ECLAMPSIA.—(Aldo C. Massaglia, *Endocrinology*, Vol. 5, No. 3, pg. 309). After carefully studying the conclusions to be drawn from six series of experiments the author concludes that "the parathyroid glands appear to have the function of neutralizing or breaking down into waste products of simpler composition complex bodies of catabolic changes, or toxic substances derived from pregnancy and the puerperium, from intestines and from muscular fatigue." He believes that a parathyroid hypofunction causes an intoxication which injures more or less the kidneys, liver, and nervous system. It is stated that there exists "between the parathyroids and the liver an indirect functional correlation in neutralizing toxic substances which arise from the intestines." The increased metabolic changes of pregnancy cause an increase over normal waste and to

this increase there is added the waste from the foetus and placenta. It is logical to believe that there is then added an enormous work upon the organs which normally free the system of these catabolic substances. The parathyroids neutralize some if not all of these substances. If the parathyroids are sub-functionating we have, therefore, "in the circulation some metabolites not converted into products which would be eliminated normally in the urine." The metabolites produce in the liver, kidneys, nervous system and other organs lesions of a greater or lesser degree of severity. These organs will take care of these substances for a time, even though the substances are not neutralized, but a point is reached when they can no longer do so—then the patient passes into a toxic state and we have developed the intoxication of pregnancy which may progress into a true eclampsia. The experiments seem to justify the conclusion that there is a "*parathyroid hypofunction in pregnancy or in the puerperium*," and it "*is then certainly a pathogenic factor in eclampsia*." With this proven or postulated the author advises opotherapy—administering parathyroidin.

BLOOD SUGAR REGULATION AND THE ORIGIN OF HYPERGLYCAEMIAS.—G. Langfeldt (*Journal Biol. Chem.*, 1921, 46, 381). Because the increase of blood sugar following the administration of sugar to depancreatized animals does not disappear as rapidly as it does in animals possessing normal pancreatic function, it is concluded that the formation of glycogen depends upon the pancreas hormone. The study fully seems to justify this conclusion.

RESEARCH PROBLEMS IN DERMATOLOGY.—(J. Frank Schamberg, *Archives of Dermatology and Syphilology*, Vol. 4, No. 3, pg. 293). Recognizing the frequent onset of acne at the approach of puberty and the frequent relapses at the menstrual periods, the author says: "The inference appears to be justified, in the light of modern studies on endocrinology, that an internal secretion from the sex glands or of some other endocrine structure energized by the gonads is an etiological factor of importance." Many disorders of the ductless glands produce profound changes in the skin and subcutaneous tissue. He quotes Darier as saying that the hypothyroidism of the menopause gives rise to a greatly attenuated picture of myxedema. The question raised by this author as to the possibility of the skin possessing hormonopoietic function is most interesting.

RECKLINGHAUSEN'S DISEASE: ITS RELATION TO THE ENDOCRINE SYSTEM.—(Oscar L. Levin, *Archives of Dermatology and Syphilology*, Vol. 4, No. 3, pg. 303). After making a careful analysis of the symptoms and symptom complexes noted in this disease, Levin says: "There is frequently seen a more or less complete syndrome indicative of dysfunction of the glands of internal secretion." A most thorough and painstaking review of the literature bearing on this disease has been made and from this review the author is warranted in saying that "the picture is one of general glandular dystrophy with varying emphasis on different glands in different cases." The cryptorrhoeic glands manifesting themselves in one or another syndrome appearing in the course of Recklinghausen's disease are the gonads, pituitary, thyroid and suprarenals.

THE CLASSIFICATION OF THE ENDOCRINE GLANDS.—(Waldeyer-Hartz, *Ztschr. f. Urol.*, 15, 153 May, 1921). The endocrines are classed according to this study as: (A) True endocrine glands, with definite forms and exclusive or essential secretion: (1) Ectodermal: Hypophysis, epiphysis cerebri (?), suprarenal medulla; (2) mesodermal: Suprarenal cortex, genital glands, testis, ovary; (3) appendages to (1) and (2) -para-nephroids (accessory suprarenal glands); (4) endodermal: Thyroid, parathyroids, thymus. (B) Double glands, true glands with external and internal secretion: (1) Mesodermal: Prostate, seminal vesicles, kidneys (?); (2) endodermal: Liver, pancreas, gastric and duodenal glands. (C) Glands of uncertain endocrine function: (1) Ectodermal: Milk glands, salivary glands; (2) endodermal: Prostobronchial bodies. (D) Structures of various sorts to which internal secretions are ascribed: Spleen, choroid plexus, myometrial glands, pyrrol cells, fat bodies, placenta and foetus. The physiological function assigned to the various glands and structures mentioned in this categorical classification is most interesting and the whole study is worthy of our careful consideration.

ROENTGENOLOGY

Conducted by WALTER C. BARKER, M.D.

SUBPHRENIC PNEUMOPERITONEUM PRODUCED BY INTRA-UTERINE INSUFFLATION OF OXYGEN.—Rubin produces an artificial pneumoperitoneum by insufflation of oxygen through the uterus. If the gas fails to reach the peritoneal cavity it shows that the fallopian tubes are not patulous. The object of this method is to determine in cases of sterility if the fallopian tubes are patent. It is not offered to take the place of the abdominal puncture in the Roentgenographic pneumoperitoneal examination of the abdominal organs, as it would be too limited in its scope of usefulness. It requires the introduction of about 50 to one hundred cubic centimeters of oxygen to determine if the fallopian tubes are patulous. After this amount of oxygen is introduced through the uterus, the patient stands. If the gas appears between the liver and diaphragm, it indicates that one or both of the fallopian tubes are patent. The paper is based upon the study of 170 examinations, and states the technic, contra-indications and the value of the method. Rubin claims that this test for the patency of the fallopian tubes should always be made before operating for sterility in women.—*Am. J. of Roentg.*, March, 1921.

PELVIMETRY BY MEANS OF THE ROENTGEN RAY.—Chamberlain and Newell have perfected a simple method to measure the diameters of the female pelvis and it is also applicable to mensuration of any of the bones of the skeleton. The special apparatus consists of a plumb-bob, small lead ring in an aluminum filter, a thin metal bar of known length to check the accuracy of the measurements and a special scale. The special scale enables the operator to read the lengths in centimeters, directly from the plates without calculating and plotting.—*Am. J. of Roentg.*, May, 1921.

THE CLINICAL IMPORTANCE OF THE DIFFERENT TYPES OF PULMONARY TUBERCULOSIS AS DETERMINED BY ROENTGEN EXAMINATION.—It is no longer a question whether an X-ray or a physical examination is the better method

of diagnosing pulmonary tuberculosis, because any lesion that can cause a physical sign, will be shown by the X-ray. Allison considers the important factor of the examination to be whether the patient has pulmonary tuberculosis, and if so, is it a type that will cause their present symptoms. It is always possible by an X-ray examination to make a negative or positive diagnosis of tuberculosis of the lungs. If tuberculosis be present, it is then necessary to know if it is of a clinical type which will give rise to the patient's symptoms, or if it is of the non-clinical type which does not cause symptoms. With a high degree of accuracy it is possible to tell which clinical type is present. If it is a parenchymatous infection, unless there is a definite fibrosis and calcification present. If it is a peribronchial infection, it is of a nonclinical type, except where it is found in the upper or middle lobe and is more marked on one side than the other, and the lesion presents itself as nodulations with hazy outlines.—*Am. J. of Roentg.*, March, 1921.

THE X-RAY SHADOWS OF LUNG SYPHILIS AND SYPHILITIC TUBERCULOUS SYMBIOSIS IN THE LUNGS.—Before 1916, Watkins found very little mentioned in the literature about syphilis of the lungs. Pathologically it was considered extremely rare for syphilis to invade the lungs. In the study of 6500 Roentgenograms of the chest, 172 were of syphilis of the lungs, 948 were advanced cases of tuberculosis showing a mixed infection; and of these, 209 were combined cases of tuberculosis and syphilis.

For discussion, Watkins divides the material of this subject under two headings, which are syphilis of the lungs and syphilis and tuberculosis appearing as a double infection in the lungs.

In making the search for syphilis of the lungs, patients who were known to be syphilitic were examined, and four fundamental facts were studied.

1. The peculiarities of the anatomical structure of the lung with the relation between bronchi, arteries and lymphatics.

2. That the invasion of active syphilis is along the arteries, while that of tuberculosis follows the lymphatics.

3. That most frequently, syphilis invades the base or lower part of the lung, while the early invasion of tuberculosis, is usually in the upper part of the lung.

4. The difference in the characteristic shadows produced by syphilis and tuberculosis.

There are three types of radiographic shadows in the lungs produced by syphilis.

1. Active or early syphilis, which is shown by the gumma or inflammatory consolidation.

2. Old, latent or hereditary syphilis which shows interstitial, peribronchial or peri-arterial fibrosis, or there may be a dense fibrosis throughout the lung or pleura.

3. Densities in the lung shadow the nature of which has not been definitely determined.

The shadows of active syphilis, follow the larger branches of the bronchus or vessels, and are usually confluent, very dense, irregular in outline with mossy edges, and are found along the border of the heart shadow, near the hilum of the lung or extending toward the base. These

shadows may be confused with those due to carcinoma, bronchiectasia, abscess, or unresolved pneumonia. When tissue resistance is sufficient to cause encapsulation, gummatous lesions result. These are usually multiple, dense shadows with irregular outlines which become more irregular when healing starts. This differentiates it from abscesses, which are smooth in outline and start to heal in the center. The peri-bronchial type shows as a linear striation extending from a dense hilum along the branches of the bronchus. The indefinite lung densities are usually found associated with lesions of the aorta and heart.

Symbiotic infections are those due to syphilis and tuberculosis appearing in the same lung. When the syphilitic lesions are of the tertiary variety or old lesions, it is very easy to demonstrate the two types of infection. When acute syphilis is present and a tubercular infection occurs, the spread of the tuberculosis will be very rapid. The two lesions are distinguished by the appearance of typical tubercular consolidations which are located without reference to the branches of the bronchi or arteries; while the syphilitic lesions are always associated with the vessels and bronchial branches.

The clinical importance of this subject is from the therapeutic standpoint. In the treatment of lues, it is important to know if the lungs are involved, since the Herxheimer reaction in the lungs may be serious. It is doubly important in tuberculosis to know if syphilis is present and whether it is active or latent. It is also important not to disturb fibrotic changes of latent syphilis by arsenical treatment, if the tendency of this fibrosis is to arrest tuberculosis.—*Am. J. of Roentg.*, May, 1921.

PATHOLOGY

Conducted by JOHN G. WURTZ, M.D.

CHEMICAL FACTORS IN FATIGUE.—(Rakestraw, *Jour. Bio. Chem.*, xlvii, 3, August, 1921, 565), gives a brief history of the observations of the older workers as to the condition of the muscles after exercise. In order to modernize these he subjected twenty-one humans to mild and strenuous exercise and estimated the amounts of blood non-protein nitrogen, urea, sugar, uric acid, creatinine, cholesterol, and hemoglobin, as well as the specific gravity, viscosity and the number and volume of corpuscles. Short strenuous exercise was found to increase the blood sugar in both plasma and corpuscles; while a longer period showed a drop which was greater in the plasma. Both kinds of exercise slightly increased the uric acid mostly in the plasma. Short exercise had no effect on the urea or non-protein nitrogen, but longer work increased both slightly. Creatinine showed but little increase. The total blood volume showed no considerable change, cholesterol was slightly decreased. The specific gravity, hemoglobin, number and relative volume of corpuscles were found to increase considerably; the viscosity of the whole blood was more increased than that of the plasma.

THE BASAL METABOLISM AND THE SPECIFIC DYNAMIC ACTION OF PROTEIN IN LIVER DISEASE.—Studies of the liver have shown that the organ has a large factor of safety, so when severely injured it is still able to perform its metabolic functions adequately. The past studies have mostly been made from the excretion viewpoint and but little has been done re-

garding the speed of absorption and the utilization of food in liver diseases. With these thoughts in mind, Aub and Means (*Arch. Inter. Med.*, 28, 2 August, 1921, 173), made a study of cases of liver disease. They found that the basal metabolism in twelve cases of liver disease was essentially within the normal limits, showing either that the liver is not an important regulator of the metabolic rate or it is capable to perform this function even though greatly diseased. The rate of absorption and utilization of protein in large quantities was usually normal, even in severe cirrhosis. Cirrhosis, they observed, showed the highest metabolic response to protein catabolism.

OBSERVATIONS ON THE RELATION OF UREA TO UREMIA.—Leiter (*Arch. Inter. Med.*, 28, 3, September, 1921, 331), gives a lengthy review of the literature upon this subject and further details his experimental work. By injecting urea intravenously into dogs, he produced a train of symptoms entirely analogous to that found in the true uremia in man. Lesions, which may be related to uremic colitis, were produced in the alimentary mucosa. The concentration of the urea in the blood, he found to bear a relationship to the severity of the symptoms, and further that chronic uremia in man may be accounted for by urea intoxication. Leiter obtained evidence that there is an active excretion of urea by the stomach, bile and intestine when excessive amounts are present in the blood.

METABOLIC STUDIES IN A CASE OF DIABETES INSIPIDUS.—Rabinowitch (*Arch. Inter. Med.*, 28, 3, September, 1921, 355), gives his detailed study of a case of diabetes insipidus. He found that there is no one specific cause for the polyuria; an endocrine and renal factor both being found. However, the endocrine theory holds his preference in so much as pituitary extract improved the concentration and rate of urine secretion in the particular case.

DERMATOLOGY.

Conducted by RALPH BERNSTEIN, M.D., F.A.C.P.

SOME THERAPEUTIC ASPECTS OF SKIN DISEASES.—Outlining a successful course of treatment in skin cases often involves the thorough systematic physical examination of the skilled internist, including in some cases, blood examinations, urine examination and study of skin scrapings. In certain chronic non-parasitic dermatoses we find the cutaneous symptoms, subjective and objective, are only the manifestations of a systemic disorder, such as an error of metabolism with faulty elimination, retention of toxic matter and depletion of the body alkali reserve with resulting acidosis. Here the internal administration of sodium, potassium and calcium salts is indicated. The value of internal treatment with glandular extracts in selected skin cases has been proven and must be recognized in spite of our limited knowledge of the intricate balance of these glands. Pilocarpin and belladonna are known to act on the vagus nervous system and adrenalin on the sympathetic nervous system. We are able to stimulate or depress the vagus system and stimulate the sympathetic system to advantage for various skin lesions due to disturbance of metabolism. The peculiar susceptibility of certain individuals to foreign proteins of animal or plant origin must not be overlooked as the etiology

of some types of eczema and urticaria. Idiosyncrasy to drugs and soaps may be responsible for certain forms of dermatitis. In selecting treatment for parasitic skin affections, including psoriasis, sulphur, chrysarobin, ammoniated mercury and salicylic acid stand out prominently. Where the time factor is to be considered chrysarobin probably gives the quickest result. The best absorption seems to be attained by using on the parts 10 per cent. solution of chrysarobin in liquoris guttae perchae N. F. The efficacy of radium and X-ray in skin therapy is unquestioned.—The foregoing are the conclusions of F. P. WERNER, *Urol. and Cutan. Rev.*, May, 1921.

THE TREATMENT OF SKIN DISEASES WITH THE ULTRAVIOLET LIGHT.—

A. E. Schiller states that the ultraviolet light acts as a decided irritant to the skin. Vitality of numerous skin cells is damaged, in order to take care of which there is a dilatation of blood vessels as a means of removing the dead and damaged cells. In other words, resorption occurs, the destroyed epithelium being replaced through increased cell division and the superficial layers being entirely exfoliated. A further function of the ultraviolet ray is its bactericidal action. The author found that comparatively severe reactions were required to affect beneficially most of the dermatoses which he subjected to light. In the treatment of acne, seborrhoeic dermatitis of the scalp, alopecia areata, cholasma, chronic eczemas, infected wounds, furunculosis, psoriasis, and parasitic diseases, excellent results are obtained. Compared with other methods of treatment the ultraviolet ray gives more rapid results, is devoid of danger, is more easily regulated, can be applied to any cutaneous surface, gives better results from the cosmetic standpoint, and is painless.—*Urol. and Cutan. Rev.*, May, 1921.

POISON OAK DERMATITIS.—H. E. Alderson and H. J. Pruett give an account of the use of poison oak extract in thirty-four cases of oak poison. The poison oak plant belongs to the same family as "poison ivy" and "poison sumac." The active poison is believed to be a non-volatile glucosid containing rhamnase, fustin, and gallic acid. Early investigators thought the active poison a micro-organism and subsequently believed it to be a volatile acid. Von Adelung in 1913 proved the poisonous agent non-volatile, and also that absolute immunity does not exist. McNair in 1917 proved bacteria are not concerned, and that serum from the active lesions will not produce a dermatitis. In January, 1921, he presented evidence that poisoning occurs only through actual transference of the active principle to the parts affected. Strickler's poison oak extract was used in over fifty cases at the Letterman G. Hospital (U. S. Army) with uniformly good results. The writers had similar experience in the thirty-four cases presented. The toxicity of the poison was also tested experimentally on laboratory animals showing that as much as 3 c.c. of this toxine given intramuscularly, intraperitoneally, and intravenously was tolerated. The writers' dosage is 1 c.c. in the deltoid. Almost invariably one intramuscular injection relieved local symptoms within twenty-four hours. Little local irritation usually existed except where the fluid worked its way along the track of the needle, when a painful indurated nodule appeared and was slow in subsiding. Occasionally a second and third injection was given within seventy-two hours. In some

of these cases occurrence of new lesions in remote parts of the body was noticed. These may have been due to excessive dosage. If so it is evidence of the specificity of the treatment. The writers state that possibly their few unfavorable results were due largely to this factor. They are now giving only one injection and hope soon to determine the question of dosage. They state that the exfoliation (and keratoplastic processes) in the course of repair of the damaged skin should not be counted as a part of the disease itself.—*California State M. J.*, May, 1921.

OPHTHALMOLOGY

Conducted by WM. M. HILLEGAS, M.D.

HISTORY AND HYGIENE OF THE EYE.—Hirschberg of Berlin quotes an edict contained in the oldest known code of laws, that of Hammurabi, King of Babylonia, which dates back to the year 2200 B. C.: "If a physician operates on a fistula of the eye and the eye is preserved, there shall be paid unto him ten shekels of silver; but if the eye is not preserved, both his hands shall be chopped off." However, scientific hygiene of the eye is only two centuries old. Hygiene of the eye was unknown to Greek physicians, they were not acquainted with the optical structure of the eye nor with ground glasses. However, Hippocrates, Galenus and Oribasius recommended various eye lotions and ointments. The middle ages did not bring much that was new. Spectacles were recommended only as a last resort, in case ointments failed to bring the desired relief. Concave lenses for myopic persons were introduced much later than convex lenses which became known in Europe in the thirteenth century. The first hygiene of the eye established on a scientific basis we owe to Hamberger, a professor of mathematics in the University of Jena, who in 1696 wrote a description of the eye and declared that the cure of optical defects must be on an optical basis. The discovery of the ophthalmoscope, the middle of last century, was most influential in bringing about further progress in the hygiene of the eye.—*Journ. of the American Medical Assoc.*, Aug. 6, 1921.

VISUAL DISTURBANCES AND PREGNANCY.—Coutela discusses first the amaurosis of pregnancy. In this condition each eye is involved to the same degree usually, and only in very rare cases does the amaurosis last until the termination of pregnancy. It may be of sudden onset, the blindness becoming total in a few moments, but generally the condition takes several days to develop, and lasts for several hours or days. Recovery is gradual, but an optic neuritis with atrophy may result. Amaurosis in pregnancy will usually be found associated with albuminuria. No therapeutic treatment is indicated for amaurosis unassociated with any other condition. The second condition the author considers is the retinitis of pregnancy, and from this type of retinitis he excludes: (1) Those pregnant women previously suffering from nephritis; and (2) those women who in the course of pregnancy have developed a nephritis due to syphilis or diphtheria. The functional symptoms of this type of retinitis are variable. Visual troubles may range from diffuse disturbances to central or paracentral scotoma. Usually the macula is invaded and vision diminished from the beginning. Inasmuch as the lesions are unequal in both eyes, the degree of visual diminution will probably be unequal. Prophylactic

treatment consists of general supervision of the patient and control of arterial pressure. Every pregnant woman should have an occasional ophthalmoscopic examination. Prognosis, once the retinitis is well established, is quite grave, depending largely on the month of pregnancy in which the retinitis begins and the general condition of the patient. The author recommends termination of the pregnancy as soon as retinitis appears. Rochon-Duvigneaud (*Ibid*), states that out of 63 children born of mothers suffering from retinitis, 51 died, either before birth, at birth, or in the first few hours of life. He, therefore, believes it useless to expose a woman to such grave danger for the sake of a foetus which has such small chance of survival.—*La Medicine*, Paris, April, 1921.

UROLOGY

Conducted by LEON T. ASHCRAFT, M.D.

ABSCESS OF THE PROSTATE.—H. L. Kretschmer, *Surgery, Gynecology and Obstetrics*, 1921, xxxii, 259. This paper is based upon a series of 43 cases of prostatic abscess.

Attention is directed to the fact that while this condition is frequently a complication of gonorrhea, gonorrhea is by no means the only cause as it may occur as a complication of other acute infectious diseases such as typhoid fever, mumps, and influenza and may be produced from some distant focus by metastasis.

The series of cases reviewed are grouped as follows: (1) cases complicating gonorrhea; (2) those of metastatic origin; (3) those following instrumentation; (4) those associated with hypertrophy; (5) those associated with urethral stricture; (6) those associated with appendicitis; (7) those associated with stone; (8) those in which the etiology is undetermined; and (9) those due to general sepsis.

Thirty patients gave a history of recent or remote gonorrheal infection, while in 16 cases a positive smear was obtained at the time of the abscess. Pus from the abscess contained gonococci in 18 cases, staphylococci in 5, streptococci in 1, both staphylococci and streptococci in 2, and bacillus coli in 1.

A moderate leucocytosis was noted in all cases in which this factor was determined. The highest count was 30,000.

In metastatic prostatic abscess the primary focus usually dominates the picture until complete retention of urine occurs or defecation is painful and difficult, when a rectal examination will reveal the complication. The usual type of primary lesion producing this complication is phlegmon of the extremities or phlegmonous angina, acute tonsillitis, furunculosis, or carbuncles.

Instrumentation was the probable cause in 17 of the 43 cases. Such injury may occur in patients with venereal disease as well as in those not so affected.

Abscess associated with hypertrophy of the prostate was noted in several instances and is frequently a difficult condition to diagnose.

In one case in which there was a urethral stricture the abscess followed dilatation, the latter being undoubtedly a predisposing factor. Another patient developed abscess thirty-one days after the removal of a

suppurating appendix. As there had not been urethral instrumentation of any kind, Kretschmer is of the opinion that there might be a causal relationship between the two conditions. Prostatic stone was found associated with abscess in one instance.

Occasionally no etiological factor can be demonstrated. In such instances the adjacent viscera should be carefully examined and the possibility of distant foci kept in mind.

As at times the clinical picture is that of general sepsis, the true nature of the condition is not known until late in its course. In other cases abscess of the prostate may be a part of a general sepsis or even the cause of the general sepsis.

There is no appreciable difference in the symptoms in the venereal and non-venereal cases after the abscess has developed. Essentially they consist of frequency of urination which varies greatly in intensity in different persons; pain, which in one form or another is almost constantly present and is suprapubic when associated with a full bladder, perineal when associated with a sense of fullness, or associated with micturition, either initial or terminal; complete retention of urine necessitating catheterization, a frequent symptom varying in duration from eight days to twelve hours; difficult urination; rectal pain which may or may not be associated with the act of defecation; other abnormal rectal sensations such as fullness and warmth; and chills and fever.

Rectal examination elicited palpatory findings in all of the cases reviewed. In advanced cases the diagnosis is easy. In early cases it is more difficult and frequently dependent upon the finding of a definite circumscribed area of tenderness and pain.

Abscesses of the prostate may terminate by resolution, rupture, or operation. In the cases reviewed only 4 terminated by resolution. Rupture may be spontaneous or due to light trauma such as straining at stool or the trauma exerted by the examining finger by accident or intent.

Since there are very definite anatomical spaces where periprostatic infection may result in abscess formation, care is always necessary in investigating these spaces when a periprostatic abscess is drained.

Sixteen of Kretschmer's cases were operated upon with no operative mortality. In 1, an opening was made into the rectum, and in another, into the ischiorectal fossa into which the abscess pointed. In the remaining 14 the perineal route was used. The perineal route is the route of choice. Care is necessary that a second abscess is not left behind.

Waiting for spontaneous rupture of the abscess should be discouraged as this time is necessarily taken at the expense of prostatic tissue; furthermore, the drainage from a spontaneous rupture may be insufficient so that a chronic discharge or future abscess formation will result.

The after-care consists in routine local treatment until the prostate strippings are free from pus.



yours truly
A. W. Belting, M.D.

President of the New Jersey State Society

THE HAHNEMANNIAN MONTHLY.

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**PRESIDENTIAL ADDRESS DELIVERED BEFORE THE HOMŒOPATHIC
MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA, AT
BEDFORD SPRINGS, PA., SEPTEMBER 13, 1921**

BY

G. W. HARTMAN, M.D., HARRISBURG.

Ladies and Gentlemen, Fellows of the Pennsylvania State Homœopathic Society:—It is a high privilege to serve as your President. I wish to thank you for the honor. If the year's work does not meet your expectations it will not be because I lacked appreciation of your favor or under-rated the responsibilities of the office. I will try to emulate my immediate predecessor by presenting a short address.

The recent years in medicine have wrought many changes in many things. We are controlled by new State laws; there are new college and hospital requirements, greater financial burdens on our institutions, new methods of teaching and all sorts of new methods of treatment. There is need to meet these new conditions. The value of our annual meeting lies in the fact that here we have opportunity to present and discuss all the new developments in science and thereby enlarge our store of knowledge and increase the efficiency of our practical work, which is to do good and heal the sick. I hope the sessions we are opening this morning will prove to be epoch making ones for the State Society and for our great system of therapeutic practice. If the unanimity of thought and action that has marked the preparations for this meeting is to be continued through it, I am sure my hope will be realized.

I believe the vicissitudes of time and the developments

of affairs medical have produced conditions unequalled, in recent years at least, for the scientific advancement of homœopathy. The time is favorable from the fraternal standpoint because there is less factional or sectarian opposition between men now than formerly; we are being welcomed into the societies of the regular school, we are being used as consultants at the bedside, and we are being greeted as medical brethren by them as never before. Politically, the conditions are favorable. Our representatives stand high in national administrative affairs, in state political circles and in the prosecution of local civic enterprises. Scientifically, things are also favorable, because our own men are proving to the skeptical the scientific value of the law of similars as well as we have always been able to prove at the bedside, the practical value of the properly prescribed homœopathic drug. Secondly, we have the opportunity, it seems to me, of preventing drug nihilism. Many old school men consider medication unsatisfactory or even useless, but to practice medicine without medicines is contradictory. I know many good men among them who want to know about, and how to prescribe homœopathic medicines since they have seen and learned of the low influenza mortality rate lately established by those prescribing as we do, and because they do not want to work without drugs.

How to take advantage of these apparent opportunities is, I think, the most important question to be considered now because in spite of them the number of our institutions is being reduced instead of increased, their financial support is falling off and the number of students applying for admission is less. You know Mark Twain once said: "Much has been said about the weather but little has been done about it." To many of us a thorough conception of a definite workable plan to advance homœopathy is about as hard to obtain as a change in the weather. I am fully aware that our leaders, our officials and teachers and many others of you whose minds can solve problems away beyond my feeble effort at mental exercise have struggled with this question and progress has been made time and again. Now and then the monkey wrench of criticism within our ranks and organized opposition without, wrecks the smoothly running homœopathic machine, but it gets fixed up and under new inspiration, goes ahead. There is still much work to do.

Dr. Stuart Close, of Brooklyn, N. Y., writes entertain-

ingly and wisely in his article published in the current number of the HAHNEMANNIAN MONTHLY. Many of his points are so evident that no one would dispute or attempt to deny them. Others are open to discussion. He says: "The future of homœopathy lies in the combination of forces, an amalgamation of schools." He seems to have none of the one time fear of the assimilations or obliteration of the one school by the other. He sees "the beginning convergence of the parallel lines of therapeutic research," and thinks soon there will be organic union of "the two schools represented by the parallel lines." He states that "the policy which led to the establishment of separate medical colleges and now maintains them separate, is wrong. Also, that to continue that policy is an economic error, financial impossibility and an educational failure."

Before I read his article (and my mind has not been changed) I thought of a different way to solve the problem. My proposition, which may be somewhat impractical because large and cumbersome, would be more to the liking of the majority of our profession than his unless they should object to the idea because they would be expected to contribute money. This I say not because of any animosity toward our old school brethren who are more liberal in view than formerly, but because we need to maintain homœopathy for posterity, and we need to maintain it for what the great pioneers have done, who have given us a great law of cure; the efficiency of which we prove daily. Doctor Sutherland, of Boston, in his address at Pittsburgh in June, explained the need of funds for our colleges. He said there must be "A" colleges. An "A" college cost \$80,000 annually to maintain. If there is an enrollment of two hundred students who pay two hundred dollars each, the income from that source is \$40,000. The balance of \$40,000 must be gotten in some other manner.

Doctor Fisher, editor of the *American Institute Journal*, said at Washington that sixteen (?) of our hospitals have either gone out of existence lately or have old school domination. These are startling facts the knowledge of which causes one to consider possible means of relief. We can build on the foundations already laid. There have been men of vision and of action all down the line from Hahnemann and Hering to the present time. The list of illustrious names is too long to enumerate here, and to do so would be superfluous.

Those in charge of the management of the Institute have planned assiduously for its advancement and for sufficient funds to do larger things. Those upon whom have fallen the guidance of the interests of this society have done the same thing. Money is needed on all sides, but money is not the great need of homœopathy. The greater need is for devoted men and women to serve under the banner upon which is inscribed "Similia Similibus Curentur," those who will hold that banner high to be seen of all medical men. Our people should drop all selfish ideals and ideas and unite in kindly professional fellowship to go forward.

One is forced to the conclusion that there must be a closer grouping of our organizations, greater plans for our educational institutions and hospitals and the greatest efficiency in financing all of them. Let us have a great objective toward which to drive. I want to suggest the gathering of a large amount of money for the adequate endowment of our colleges and the maintenance of our hospitals. I am reminded of the plan used by a small religious denomination to put over a big campaign. The same plan looks practical for our school. That denomination has 1,200 ministers, seven colleges, two seminaries, four preparatory schools and 350,000 members, while we have almost 9,000 physicians, five or more colleges, quite a number of hospitals and a following estimated at a million and a quarter, including, I am told, many wealthy persons. Surely, the comparison is in favor of our profession. No doubt money can be gotten more readily for a religious object but people want to contribute to educational institutions and hospitals. Charity is the most commendable object to which money may be given or bequeathed whether the donor be a church member or a philanthropic worker outside of religious organizations. The denomination referred to authorized a financial campaign in 1919. An executive committee was formed immediately that put on a canvass in 1920, which resulted in 10,000,000 dollars worth of subscriptions of which approximately one and a half millions have been paid in. The balance is to be paid by 1925.

The success obtained by this denomination does not prove that the same plan executed by the American Institute would succeed, but I believe that it merits a trial. To operate the plan would call out the ablest men of our school in the nation. It would comprehend a preparation period of twelve to eighteen

months during which telling advertising and judiciously prepared and placed propaganda would be expected to influence people to give. It would require an organization of departments headed by full-time men. It would demand the loyal support of the members of the profession, who would procure the best of their patrons to serve as canvassers to solicit funds, and it would need the large contributions that only the very wealthy users of homœopathic treatment could give.

All of the work and worry and sacrifice could be well borne by the devoted followers of Hahnemann if the results would be: (1) Millions enough to adequately endow and equip four or five homœopathic medical colleges in the United States; (2) The conservation to homœopathy of its own hospitals, administered solely by devotees of Hahnemann; (3) A revival of interest in the law of similars on the part of young men who might be induced to recruit our ranks; (4) A return to symptomatic prescribing of the single remedy which would necessitate a guarantee on the part of manufacturers that their remedies are pure and accurately made. I know that these are things that the leaders must consider but I wanted to bring them before the society in the hope that something would happen, namely, that the trustees, or a special committee, would be instructed to overture the American Institute to consider the feasibility of the plan if that be the *modus operandi*. Is it too visionary? I think not for the reasons given. Besides, without vision, advancement is impossible and "where there is no vision, the people perish." Have you the vision?

I wanted to take up to some extent the matter of judicious student recruiting on the part of our field men; greater friendliness and larger effort at helpfulness on the part of homœopaths who occupy contiguous territory for "It is always better to lock arms than to lock horns," but time will not allow.

In closing, permit me to express my sincere thanks to the Trustees, Bureau Chiefs, Committee Chairmen and all who contributed to the success of the meeting of 1921.

THE HOMŒOPATHIC MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA, BUSINESS PROCEEDINGS OF THE 58TH ANNUAL SESSION, HELD AT BEDFORD SPRINGS, PA., SEPTEMBER 13, 14, 15, 1921

FIRST SESSION.—Tuesday morning, September 13th. The meeting was called to order by the President, Dr. G. W. Hartman, of Harrisburg, at 10.10 A. M. In the absence of Dr. I. D. Metzger, President of the Allegheny County Homœopathic Medical Society, Dr. John G. Wurtz, of Pittsburgh, Vice-President of that Society, delivered the address of welcome, to which a response was made by President Hartman.

Dr. G. W. Hartman then delivered the Presidential Address, which will be found on page 689 of the current issue of the *HAHNEMANNIAN*. Dr. J. M. Kenworthy occupied the chair during its presentation. After a vote of thanks to the President for his address, Dr. Kenworthy appointed as Committee on President's Address the following: Dr. Henry I. Klopp, of Allentown; Dr. E. A. Krusen, of Norristown; Dr. Wm. A. Pearson, of Philadelphia.

Dr. Ella Goff, of Pittsburgh, Treasurer, reported receipts from annual dues during the past year of \$3,088.00; and a balance on hand in 1921 of \$3,656.06, as opposed to a balance of \$4,043.83 in 1920.

The Necrologist, Dr. John C. McCauley, of Rochester, Pa., reported the following members as deceased during the past year:

Geo. F. Baer, Pittsburgh.	Chas. S. Kinney, Easton.
Percy H. Ealer, Philadelphia.	R. W. McClelland, Pittsburgh.
Wm. Erwin, Philadelphia.	J. R. Mansfield, Philadelphia.
Howard A. Fehr, Allentown.	Elmer H. Mauer, Ashland.
H. B. Fetterhoff, Huntingdon.	M. J. Nevinger, Philadelphia.
G. W. Gardiner, Philadelphia.	W. C. Powell, Jr., Bryn Mawr.
R. F. Goeringer, Scranton.	J. G. Sperling, Wilkes-Barre.
E. A. Hambright, Philadelphia.	Alonzo P. Williamson, Santa
D. W. Harner, New Holland.	Monica, Cal.

Dr. E. A. Krusen, of Norristown, Chairman of the Committee on Legislation, reported as follows:

Mr. President and Members of the Homœopathic Medical Society of Pennsylvania:—As Chairman of your State Legislative Committee and Secretary-Treasurer of the Medical

Legislative Conference of Pennsylvania, it will be my effort to give you a brief outline of the work of your committee in behalf of the medical profession of Pennsylvania.

Just one year ago, one of the most important subjects before this organization was the Compulsory Health Insurance. At that meeting the subject was so vigorously discussed by able representatives from both sides, that a deep impression was left on the minds of the representatives of the Commission appointed by the Governor to investigate Compulsory Health Insurance. This commission held several meetings during the autumn and winter, which were attended by several representatives of the Medical Legislative Conference. The subject was pretty thoroughly threshed out and after careful investigation the commission rendered two reports: one signed by nine members of the commission opposing Compulsory Health Insurance, but two members sent in a minority report favoring Compulsory Health Insurance. (One member who signed the minority report is in the list of the General Administrative Council of the American Association for Labor Legislation.) The American Association for Labor Legislation was probably the advocate of Compulsory Health Insurance, but from the report of the Pennsylvania Health Insurance Commission, that subject is dead in Pennsylvania at present and perhaps for many, many years to come.

During the year the Conference held several meetings, most of them in Philadelphia, and were always well attended. There seemed to be a deep interest felt in these meetings, and all were willing to contribute their time and council for the benefit of the Medical Fraternity in this State.

During the legislative session there were four bulletins published and circulated as best we could under the circumstances, giving the readers an opportunity to see at a glance the bills that were before the Legislature and the Senate. The bills were carefully scrutinized, the important parts condensed and an opinion given as to whether they should or should not be supported by our Conference.

While several members of the Conference took some part in this, most of the work was done by Dr. F. L. VanSickle, who deserves the utmost credit for his untiring efforts. The expense of these publications was borne by the Conference.

In October, 1920, a circular letter was sent to every physician in Pennsylvania; again in December and in August of the present year, letters were sent to the secretaries of all the Medical Societies in Pennsylvania. The efforts of the Council to keep in close touch with the profession have produced good

results. The profession responded sufficiently well to contribute funds to carry on the work successfully.

During the session of the Legislature and Senate frequent visits to Harrisburg were made by several members of the Conference, and it was necessary to continually stand on the firing line. The most obnoxious bill was House Bill No. 23, known as the Chiropractic Bill. In the management of this bill the Conference was misunderstood by many in the profession. It was very evident to those who were in a position to judge that the bill had friends enough to support a fair bill to a final passage. It was not the intention of the Conference to oppose the Chiropractor, but it was, and is yet, the determination of the Conference to secure for the people of Pennsylvania men who are sufficiently educated in the preliminary branches of medicine that they can intelligently treat the human body. The efforts of the Chiropractor will undoubtedly be renewed at the next session of the legislature. Let every physician in Pennsylvania be awake to the issue and help to elect representatives who will defend the things that are for the best interests of the people of this great Commonwealth.

The medical profession owes a debt of gratitude to Dr. Steedle, of McKees Rocks, who did splendid work in the House, and to Senator S. J. Miller, of Madera, Pa., who did equally well in the Senate.

Dr. G. A. Knowles, President of our Conference, spared neither time nor energy in looking after all legislation pertaining to the welfare of the people of Pennsylvania. Indeed, the whole Conference did splendid work, always assisted by the presidents of the State Medical Societies of all schools.

We had for our councilor, Robert Haight, whom you have all met and in whom we have found an enthusiastic and able ally. As a representative of the Legislative Bureau of the Pennsylvania State Chamber of Commerce, he was always ready to advise and we have found his judgment sound and safe to follow. We are indeed fortunate to have with us such a friend and advisor and hope we may continue to have the benefit of his experience and judgment in legislative matters.

It would not be amiss if the doctors of our State would take a more active interest in the political affairs in their communities and it would be equally helpful to have a greater number of live medical men in the Legislature and Senate. All of those who were there last year were of real service and should be returned if they are willing to accept the honor.

(Signed) E. A. KRUSEN, M.D., *Secty.-Treas.*,
Medical Legislative Conference of Penna.

Following this Dr. Krusen presented his report as Treasurer of the Legislative Conference as follows:

Since the organization of the Medical Legislative Conference in November, 1916, up to the present time, covering a period of about five years, there has been received by the treasurer from all sources the sum of \$9,047.84. The money expended \$8,768.15—leaving a balance at the present time of \$279.69 in the treasury; therefore, the doctors of the State have contributed on an average of 79c. per capita in the five years. When it is brought down to this point it shows that in that time the contributions were not very large, but many of our Medical Societies have either been assessed \$5.00 per member, which was cheerfully paid, or some making voluntary contributions of a like amount; but your contributions have been sufficient to meet our need up to the present time and we feel that the money has been carefully and wisely spent.

Let us not, however, relax our efforts but continue to contribute to this fund that your interests may be looked after. The coming session of our Legislature will demand even more strenuous efforts and your financial support will be quite necessary. It would seem best that those present should take it upon themselves to bring this promptly before their local Medical Societies and report to the Secretary-Treasurer of the Conference.

E. A. KRUSEN, *Secretary-Treasurer,*
Medical Legislative Conference of Penna.

DR. G. HARLAN WELLS, of Philadelphia, complimented Dr. Krusen and the Conference for the great amount of efficient work done by them during the past winter. He laid particular stress on the indebtedness of the profession to them for the skillful manner in which their campaign against compulsory health insurance had been conducted. Speaking for himself, concerning the bill, Dr. Wells remarked that it was obvious that compulsory health insurance was not wanted by employers, employees or the medical profession; those who were forcing it upon the community consisted mainly of social service workers and bolshevists of good intention, who knew nothing at all practically, and rushed into things that they think will be beneficial, but which prove to be quite the reverse. The work of the Conference concerning health insurance has certainly placed the problem in such a position that should it arise again it can be handled without any difficulty. In closing, Dr. Wells remarked that the amount of money that this Legislative Conference had cost us amply repaid us for the expenditure.

DR. WM. M. HILLEGAS, of Philadelphia, supported Dr. Krusen's plea that we all go into politics, at least to the extent of taking an interest in the type and character of men sent to the legislature at the next session. In work of this kind we should always start early; there will be no legislative session the coming winter, but we should get ready for 1922-23. At that session there can be no question but that the Chiropractic Bill will come before us once more.

DR. E. A. KRUSEN, of Norristown, arose to invite the attention of the Society to the Pennsylvania State Chamber of Commerce, membership in which may be had from all Pennsylvania organizations of standing. This State Chamber of Commerce was an influential factor in condemning compulsory health insurance, and gave the Conference wonderful help. He thought that our Society should become a member of the Pennsylvania Chamber of Commerce, and offered the following resolution:

Be It Resolved, That the Homœopathic Medical Society of the State of Pennsylvania apply for one membership in the Pennsylvania State Chamber of Commerce, and that the Treasurer be authorized to pay to the State Chamber of Commerce twenty-five dollars, which is the annual dues in advance.

On motion of Dr. Clarence Bartlett, of Philadelphia, this resolution was referred to the Board of Trustees, with a favorable recommendation. Carried.

Dr. Clarence Bartlett, as Chairman of the Committee on New Members, reported the following applications, which were later acted upon by the Censors, and the physicians named were declared elected:

Russell S. Anderson, Kane, Pa.; Wm. T. Bond, Philadelphia; Raymond T. Briggs, Philadelphia; S. Newton Burchfield, Titusville, Pa.; Walton S. Burriss, Tacony, Phila.; John A. Carroll, Cumbola, Pa.; Max Cohen, Philadelphia; J. I. Darnell, Easton, Pa.; Willis B. Day, Utica, N. Y.; —. —. Dickinson, Philadelphia; Karl Dinmelich, Scranton, Pa.; J. J. Elliott, Jr., Boston, Mass.; Walter Lesley Fellows, Philadelphia; W. H. Follmer, Williamsport, Pa.; F. Orville George, Pittsburgh, Pa.; John R. Gillette, Philadelphia; Henry W. Goeken, Chester, Pa.; Judson Hancock, Philadelphia; Robert M. Hening, Abington, Pa.; Joseph I. Heritage, Langhorne, Pa.; Govind S. Hiwale, Clearfield, Pa.; M. L. Hockenbery, Bangor, Pa.; Carl L. Hosier, West Pittston, Pa.; Russell M.

Houck, Reading, Pa.; John L. Ireland, Erie, Pa.; J. DeWitt Jackson, Erie, Pa.; William S. Johnson, Philadelphia; Edwin H. Jones, Philadelphia; Augustus Korndoerfer, Jr., Philadelphia; C. Carroll Krusen, Norristown, Pa.; Charles F. Kutterhoff, North Wildwood, N. J.; J. P. Lewert, Scranton, Pa.; Merrill H. Long, Altoona, Pa.; Clement F. Lynch, Camden, N. J.; Wm. J. Lynch, Philadelphia; Thomas G. McCleary, Kansas City, Mo.; Rea P. McGee, Pittsburgh, Pa.; H. J. McLaren, Beaver Falls, Pa.; Ivy McNair, Kirkwood, Pa.; H. L. Mauser, Scranton, Pa.; C. D. Miller, Pittsburgh, Pa.; G. Irving Naylor, Johnstown, Pa.; Edgar C. Niebaum, Wilkesburg, Pa.; Thomas W. Phillips, Philadelphia; C. Ira Pratt, Coatesville, Pa.; Frank L. Richards, Huntingdon, Pa.; Paul W. Riddles, Johnstown, Pa.; F. G. Robinson, Scranton, Pa.; Jos. W. Shallcross, Philadelphia; Wm. G. Shemeley, Jr., Philadelphia; G. Edwin Shetrone, York, Pa.; Clarence L. Shollenberger, Philadelphia; Samuel Sleath, Ambler, Pa.; Edward Roland Snader, Jr., Philadelphia; James C. Stirk, Swarthmore, Pa.; I. Walter Sutton, Philadelphia; John W. Sykes, Roxborough, Phila.; Chas. A. Tomlinson, Milton, Pa.; Howard Locke Vail, Scranton, Pa.; Raymond G. Walker, Philadelphia; Wm. M. Wallace, Johnstown, Pa.; S. S. P. Wetmore, Easton, Pa.; John C. Wienski, Stamford, Conn.; Daniel A. Wilson, Norristown, Pa.; George F. Wright, Abington, Pa.; Robert H. Wymer, Huntingdon, Pa.; Oscar F. Ziegler, Philadelphia.

Continuing his remarks, Dr. Bartlett called attention to the fact that there still remained 300 out of the 1150 physicians of Pennsylvania not members of the Society, and these can only be secured by united and consistent effort on the part of all of us. State Society affiliation is becoming more and more important each year. Industrial organizations, state departments and others are beginning to look askance at physicians who are not members of their respective societies. They assume that a physician who is not a member of his medical society is lacking in ethics or enterprise, and possibly in both. The majority of those who are non-members are simply neglectful; there seems to be no difficulty in getting them to join after a personal interview.

The report of the Entertainment Committee was presented by Dr. Roland T. White, of Pittsburgh, in the absence of Dr. Wm. Alvah Stewart, chairman of the committee.

Dr. Ralph Bernstein, Philadelphia, presented the report of the Committee on Publicity.

Dr. John G. Wurtz that of the Committee on Exhibits as follows:

The Committee on Exhibits appointed by Dr. I. D. Metzger, President of the Homœopathic Medical Society of Allegheny County, wishes to report and recommend the following:

Circular letters were sent to 91 drug, pharmaceutical, instrument, publishing and supply companies; 33 of this number responded. Of these eight accepted and are exhibiting their wares in the parlor.

This list I present to the secretary for the use of future exhibit committees.

The price of exhibit space has been set by the committee at \$25.00. Dr. John D. Kistler is acting treasurer.

Dr. H. S. Nicholson assisted in the securing of plan of the hotel so that a blue print could be sent to the prospective exhibitors.

The Committee on Exhibits after a few months of work has experienced enough to see the great weakness of our present system of handling the exhibits, and recommends a scheme similar to, if not exactly like, the following:

The next place of meeting should be decided upon at the annual meeting. Since exhibits are a permanent feature of our annual meetings, they should be handled by a permanent committee, closely related to the secretary, so that early and official communication could be established with the various exhibiting concerns. Such communications could be carried on on the Society's stationery and made official.

So wide-spread are the exhibiting concerns that it is far from a local affair.

Many manufacturers and distributors make yearly allowance, a budget, to cover the cost of exhibiting. Early and persistent correspondence would permit them to consider our meetings in this budget.

Since the Society is financially benefited by the exhibits and the exhibits are an advertisement for the concerns, the whole affair resolves itself into a mutual beneficial arrangement, which will result in increasingly cordial relationship.

The treasurer of the Society would receive the money paid for exhibit space. From this fund could be appropriated sufficient to cover the cost of the yearly entertainment. From

this fund could be appropriated sufficient to cover the cost of a "write-up" in our official Journal.

Regarding this "write-up" the committee feels that it should include a plan of the floor space occupied by exhibitors, with the names of exhibitors, and the number of the space each would occupy.

Copies of the number of the Journal should be sent to exhibitors, showing that they get free advertisement in the text-section of our Journal, in the meeting or program number.

The policy of the Society in giving display to exhibitors, the editorial calling the members' attention to the exhibits, and urging them to patronize the same should be made known to the different concerns as an inducement to exhibit.

This method it seems would enable the Society to decide upon a meeting in a part of the State in which homœopathic propaganda would be desirable, and not compel the trustees to await an invitation from some local and perhaps not too well organized County Society.

This year the expenses of the Exhibit Committee and also of the Entertainment Committee will be paid from money received from exhibitors, the deficiency being made up from the treasury of the Homœopathic Medical Society of Allegheny County.

Respectfully submitted by

JOHN G. WURTZ, *Chairman*,
H. S. NICHOLSON,
JOHN D. KISTLER,

Members of the Committee on Exhibits.

On motion of Dr. Clarence Bartlett, Dr. Wurtz's report was referred to the Board of Trustees, with favorable recommendation.

The report of the Editorial Committee of the HAHNE-MANNIAN MONTHLY was read by the Chairman, Dr. Clarence Bartlett. In closing this report, showing the progressive prosperity of the Journal, the speaker called attention to the value of the Journal system of publishing Society transactions, and its effect upon the standing of the Society and improvement in the quality of the papers presented. Unless a society has a publicity medium for its papers, essayists receive but little encouragement in the way of reward for their labors. At the

best, fifty to one hundred members listen to a paper at a meeting; published in a medical journal the papers secure an audience of well on to two thousand or more.

Dr. John C. Calhoun, of Pittsburgh, next presented the report of the delegates to the American Institute of Homœopathy. This report consisted of quotations from the *Journal of the A. I. H.*, and showed a lack of any definite information concerning federation and the slowness with which federation had been accomplished. Dr. Wells, discussing this report, commented on the lack of a definite trend toward organization covering the period since federation was first considered until finally, to use his quotation from the floor of the Institute, "That federation was a failure and a worthless wreck." This stage having been reached the Pennsylvania delegation succeeded, after considerable manipulation and discussion, in passing a resolution which placed the entire business of the Institute, with the exception of the election of officers, in the hands of the Congress of States. This enactment gives the Institute time for scientific work, and will make possible a better organization of the homœopathic medical profession throughout the country. Dr. Wells further deprecated the assessment by the Institute of one dollar per capita on the constituent societies. This matter should be dropped, especially in view of the increase of Institute dues from five dollars to ten dollars. This dollar assessment stands in the way of easy federation. Our Society is in good financial condition, probably there is none better, and yet our treasury will not permit the regular payment of seven to eight hundred dollars per year as a new fixed charge.

In closing, Dr. Wells called attention to the great importance of care in selection of Societies' delegates. The best men should be sent to represent the State Societies at the National meetings. He deplored the frequency with which the secretary of the Institute was obliged to seek out men on the floor to go into the meeting to represent this, that or another State. The State Societies must send their best men to the Congress.

Dr. Clarence Bartlett, of Philadelphia, expressed his pleasure at hearing the remarks of Drs. Calhoun and Wells. The business proposition entered very largely into this question of the problem of States. Ours is a prosperous and well organ-

ized Society—the speaker believed that there were none better. Last year we conducted business at a deficit of \$500.00, due mainly to the large drain upon us in fighting compulsory health insurance and other matters. In normal years we have an excess of receipts over expenditures of about \$200.00, or in the neighborhood of twenty to thirty cents per member. Our annual budget covering fixed charges amounts to \$4.30 per member, while floating expenses will bring the amount up to \$4.90. It is thus evident that this prosperous Society cannot add one dollar per annum to its fixed charges without increasing the dues, which naturally will have a disorganizing influence, especially as County and National Society dues have been raised.

The report of the Committee on By-Laws, consisting of Drs. Wm. M. Hillegas, Philadelphia; Geo. B. Moreland, Pittsburgh, and Clarence Bartlett, Philadelphia, was next presented. The report of this committee was published in the May HAHNEMANNIAN MONTHLY, and after due consideration and debate the recommendations were adopted with the exception of two items. On motion of Dr. Wells, the number of delegates sent to the Congress of States was changed from two to three, each delegate to serve three years. Debating this subject Dr. Hillegas expressed an opinion that societies should, as far as possible, give definite instructions to delegates concerning important policies likely to be debated at the Congress. The other objection to the report of the By-Laws Committee related to the duties of Treasurer and Secretary. The new amendment, it was shown, would throw an unreasonable amount of work upon the Secretary. It was, therefore, moved and seconded that the old by-laws relating to this point be continued. The motion then to adopt the entire report of the committee was made by Dr. Hillegas, and seconded by Dr. Wells, with such alterations as the committee has suggested. It was then voted on and carried.

The report of the Women's Homœopathic League, prepared by Mrs. Warren C. Mercer, President, and Mrs. M. W. Benjamin, Secretary, had been given to Dr. Kenworthy, who read it.

The report of the Superintendent of Allentown Homœopathic Hospital was next presented by Dr. Henry I. Klopp, and was as follows:

NINTH ANNUAL REPORT OF THE HOMŒOPATHIC STATE
HOSPITAL, ALLENTOWN, PA.

The Ninth Annual Report of the Homœopathic State Hospital to the Homœopathic Medical Society of the State of Pennsylvania, statistically covering the period from June 1, 1920, to May 31, 1921, is hereby respectfully submitted.

It is with considerable satisfaction that we are able to report that the hospital has advanced to the point where it is fulfilling two functions: First, for which it was originally established—for observation, research, care and treatment of mental diseases. In its organization and growth since its opening in October, 1912, and particularly in the construction of new buildings, a definite purpose has been kept in mind; namely, to fulfil the object for which it was intended, primarily the restoration of patients entrusted to its care to normal mental health. Second, as a part of a general scheme for community service for the prevention of such disorders through public education upon the subject of Mental Hygiene, for the holding of mental clinics and as a teaching institution. It is our opinion that hospitals for mental diseases just as much so as general hospitals must have a definite relation to the community or territory they serve.

These are general principles which should be the foundation of every hospital organization, and they are all the more applicable to hospitals for mental patients. The institution being located midway between two thriving industrial cities with educational advantages, has established the principle of granting free access the same as to a general hospital.

The first activity of the institution was its connection with Hahnemann Medical College as a teaching hospital for senior medical students and internes. Second, the holding of mental clinics for the medical profession of the Lehigh Valley, from which the bulk of its patients are admitted. Third, the establishment of mental clinics in adjacent cities—Easton, Allentown and Bethlehem. Fourth, its association with the Lehigh University of Bethlehem, Pennsylvania, through its Professor of Psychology, who for the past five years has brought his classes to the hospital for lectures and clinics. One year ago, this latter scope was enlarged by association with the University Extension Summer School Course for Teachers. The hospital has also given the same privilege to the Professor of Biology at Muhlenberg College, Allentown, Pa., for his students and teachers; and to the Allentown High School Classes in Civics.

The Movement of the Hospital Population has been as fol-

lows: On June 1, 1920, there remained under care and treatment in the hospital 1,247 patients—622 men and 625 women. Within the hospital year ending May 31, 1921, 391 cases—189 men and 202 women—were admitted, making the total number under treatment for the year 1,638; 811 men and 827 women. Of the 391 admitted, 314 were first admissions and 27 were voluntary without commitment. The daily average number of all patients actually in the institution during the year was 1,175—528 men and 593 women.

The total discharges within the hospital year numbered 361—188 men and 173 women; of this number 48 were recorded as recovered, 105 improved, 30 unimproved, 4 without psychosis, 56 transferred to other institutions for mental diseases, and 118 died during the year. In addition to the 361 direct discharges, 91 appeared on our books as connected, although absent from the hospital on furlough. At the end of the hospital year, May 31, 1921, there remained on the books of the institution 1,277 patients—623 men and 654 women.

This institution was selected by the U. S. Public Health Service as one of two mental hospitals in the eastern part of the State as a contract hospital for ex-service patients. We have at the present time fifty-one ex-service men in the institution, forty-one of which are maintained by the Veterans' Bureau.

We have made a definite advance in our training school for nurses through a reciprocity affiliation with the Allentown General Hospital whereby there is an exchange of nurses between the two schools. Our nurses go to that school for one year for nursing in surgery, obstetrics, pediatrics, communicable diseases, social service and public health work so as to conform to the requirements of the State Board of Examiners for Registration of Nurses; their students come to our hospital for Mental Nursing, and special subjects such as psychology, hydrotherapy, x-ray, electrotherapy and occupational therapy. All class work is co-ordinated between the schools. As far as known this is the only State Hospital in Pennsylvania where there is such a reciprocity arrangement. We consider this an advance from a Nurses' Training School standpoint. There is every proof that the general hospital nurse will have a definite advantage by additional training in Mental Nursing.

In addition to rest, food, fresh air, exercise, prescribing the indicated homœopathic remedy and hydrotherapy, occupational and physiotherapy play an important part in the treatment of mental patients. We have a directress and two aides for the occupational therapy work. The past year a forestry nursery has been added to this department with much benefit

in attracting the interest of patients and serving as diversional out-door occupation. A physical directress and entertainer is giving full time and attention to our patients, and is considered a therapeutic factor in the treatment of mental patients.

A complete new 12 K. W. x-ray generator with Coolidge equipment and fluoroscope, also a high frequency, a sinusoidal faradic and galvanic and a Burdick ultraviolet generator have been installed, replacing our former outfit which was becoming obsolete.

The foregoing is hereby submitted,

HENRY I. KLOPP, M.D.,

Superintendent and Physician-in-Chief.

September 13, 1921.

DR. WM. A. PEARSON, Philadelphia, expressed his admiration of the management of our hospital at Allentown, as he considered it one of the greatest assets of the homœopathic profession of Pennsylvania and elsewhere. An institution of that kind does homœopathy more good than ten thousand tons of printed matter. It has demonstrated to those in authority at Washington and elsewhere that there is something valuable and practical in homœopathy.

Our students at Hahnemann have had the advantage of visiting Allentown and obtaining instruction in mental diseases at first hand from Dr. Klopp, an advantage that has not been made available by any other medical college. In closing Dr. Pearson thanked Dr. Klopp for his courtesy to the students, and for maintaining an institution on such a high plane of ethical and humane efficiency, a standard that reflects credit on homœopathy.

DR. KLOPP, replying to a question of Dr. Anna Johnston, of Pittsburgh, said that he had avoided in his remarks the making of comparisons with other institutions. His first object had been to gain the confidence of the medical profession of the counties from which we drew the bulk of our cases. He felt that he had succeeded in this object. His slogan to his medical staff was, "Do not preach homœopathy from the housetops. Let this institution stand for homœopathy by the result of its work."

As regards the tabulation of cure, the personal equation is a definite factor. For example, in the old days the superintendent decided who should be reported as restored and who should not. Today this subject is decided by the entire medi-

cal staff, and the majority vote rules. This may be rather conservative, but we believe it to be wise. In doubtful cases we say "improved." We follow up our patients on the yearly basis, and find that a large number of them are doing remarkably well, which is furthermore evidenced by the fact that we have a low readmission rate.

Results, of course, in mental work cannot be ideal, because many of the patients lack something. They are more apathetic and indifferent, for instance. We cannot put such in the restored group from our view point, although the general practitioner would do so.

DR. WM. ALVAH STEWART, of Pittsburgh, spoke in commendation of Dr. Klopp's work, and said, from a very close investigation of the work done there, that it was remarkable to note the almost entire absence of drug and mechanical restraints.

The following committees were then appointed by President Hartman:

COMMITTEE TO AUDIT THE TREASURER'S REPORT.—Dr. Wm. M. Sylvis, Philadelphia; Dr. Henry B. Strock, Bedford; Dr. Wm. C. Harmount, Pittsburgh.

COMMITTEE ON RESOLUTIONS.—Dr. Wm. M. Hillegas, Philadelphia; Dr. George B. Moreland, Pittsburgh; Dr. G. Harlan Wells, Philadelphia.

WEDNESDAY MORNING, SEPTEMBER 14th, 9.25 A. M.—President Hartman in the chair.

The resignations of Dr. Lydia Pierce, Dr. C. J. Meily and Dr. C. H. Hoffman were presented and accepted.

11.00 A. M.—The Committee on President's Address reported as follows:

REPORT ON PRESIDENT'S ADDRESS.

Your committee endorses the desire of our President in bringing the truths of homœopathy to our old school brethren. It is, therefore, recommended that homœopathic literature be freely disseminated among allopathic physicians desiring to know more of homœopathy, and to extend them cordial invitations to attend our local Homœopathic Medical Societies.

The statement in regard to the political situation, we heartily endorse, since the United States has gone homœopathic and the political status, both national and state have

changed so radically in the last few years. It has brought us closer to a united medical profession than ever before.

The impression that has been made on the minds of many in the profession that our colleges and hospitals were decreasing is obviously incorrect. While the colleges are reduced in number the efficiency of those in existence has increased with the advance in medical science and the number of students in our homœopathic colleges is just as encouraging as the number in allopathic colleges. The hospitals under homœopathic management have been increased in numbers and compare favorably with like institutions all over the country.

We do not agree with the attitude taken by some educators that the future of homœopathic colleges rests in amalgamation but advise determined efforts by all friends of homœopathy to endow the chairs of homœopathic materia medica and therapeutics in all of our colleges, so that their permanency will be secured for suffering mankind for all time and their individuality thereby perpetuated.

The suggestion offered for securing endowments for all of our institutions is heartily endorsed and we hope that the time may be near at hand when such a goal can be reached, but in view of the present chaotic condition of the industrial and financial world, which, according to history, follows all wars of great magnitude, it would seem inadvisable and inopportune to attempt to prosecute a campaign for that purpose at this time, with the hope of any substantial results.

We wish to congratulate our President on the vision he has and hope he may live to see it fulfilled. We wish to thank him for his efforts in the past year and the success he has obtained in making this meeting of the Homœopathic Society of Pennsylvania an occasion of pleasure and profit never to be forgotten by those who are fortunate enough to be present.

HENRY I. KLOPP,
W. A. PEARSON,
E. A. KRUSEN.

Nominations of Officers for the ensuing year were made as follows:

For President, Dr. Clarence Bartlett, Philadelphia; nominated by Dr. E. S. Snyder. Dr. John C. Calhoun, of Pittsburgh, nominated by Dr. Geo. B. Moreland.

First Vice-President, Horace E. Kistler, Johnstown.

Second Vice-President, W. M. Raymer, Beaver Falls, (declined); Margaret Hassler, Reading.

Secretary, John M. Kenworthy, Philadelphia.

Treasurer, Ella D. Goff, Pittsburgh. (Nominated by Dr. Bartlett, and seconded by everybody with a rising vote).

Necrologist, John C. McCauley, Rochester.

Censor, Roland T. White, Pittsburgh.

Trustees, G. W. Hartman, Harrisburg; William M. Hillegas, Philadelphia; John G. Wurtz, Pittsburgh.

Dr. Clarence Bartlett then called attention to the fact that the term of Dr. Hillegas as a member of the State Board of Medical Education and Licensure, had expired, and that the Governor had not yet appointed his successor. This matter was discussed at the trustees' meeting the previous evening, and as individuals the Board of Trustees expressed themselves well satisfied with the work of Dr. Hillegas. They did not, however, feel that it was proper for them, as an official body, to take action or send such a recommendation, but they did think it perfectly proper that the Society should make a recommendation, based upon their opinion of Dr. Hillegas, which was entirely favorable. It was, therefore, moved that a telegram be sent to the Governor recommending Dr. Hillegas's reappointment. Carried.

Dr. Wm. A. Pearson then called attention to the necessity of maintaining and developing American chemical industries, and suggested that the State Society should consider the advisability of sending a telegram to the President of the Chemical Foundation to the effect that the Pennsylvania State Homœopathic Society realizes the importance of maintaining and developing the chemical industry and desires to co-operate in this work. Dr. Pearson said that the war was not half over, and probably never would be; because German intrigue and German propaganda were trying to thwart the efforts of the chemical industry. From the standpoint of self-preservation, he thought it necessary that the chemical industries of the United States should be maintained; as over half of the activities of the war were directly dependent upon chemical industry. Therefore, he suggested that the Committee on Resolutions consider the advisability of sending a telegram as follows:

Resolved, That The Pennsylvania Homœopathic Medical Society realizes the importance of protecting American Chemical Industries and assures The Chemical Foundation of the co-operation of its members in maintaining and developing them.

THURSDAY MORNING, SEPTEMBER 13th.—Dr. Hartman in the chair. The Auditing Committee reported that it had examined the treasurer's accounts and found them to be correct.

The Committee on Resolutions reported as follows: *Resolved*, 1. That we commend the efforts of the officers of this Society for their maintenance of the affairs of the Society on the same plane as in the past.

2. That we extend to the Homœopathic Medical Society of Allegheny County, having the meeting in charge, our thanks for the excellent manner in which all the social and other meetings of the Society were conducted, with special thanks to Dr. W. C. Harmount for his indefatigable energies in shaping and conducting the social features.

3. That we express to the management of the Bedford Springs Hotel our appreciation of their efforts in making our stay comfortable and pleasant.

4. That we express to the exhibitors our appreciation of their courteous attention to the members who visited them.

5. That we thank the press for the space given to reports of the meetings.

6. That we express to the Publicity Committee our appreciation of their efforts in procuring publicity for the Society.

7. That the secretary be instructed to place these resolutions in the minutes of the meeting, and to notify those concerned of the action taken.

(Signed) GEO. B. MORELAND,
WM. M. HILLEGAS.

Dr. Moreland, as Chairman of the Committee expressed the idea that in the future it would be best to have all resolutions offered before this body referred to the Resolutions Committee, that they may be scrutinized by the committee before being acted on by the Society. Otherwise, a resolution might be passed by this body that would not be for the best interests of the Society.

Dr. Bartlett, in accordance with Dr. Moreland's suggestion, offered an amendment to the By-Laws providing for a Resolutions Committee consisting of three members, to whom all resolutions should be referred before being acted upon by the Society.

Dr. Kenworthy offered an amendment to the By-Laws

providing that a Committee on Exhibits be conducted along the lines suggested by Dr. Wurtz.

These amendments were then laid over for action until September, 1922.

Election of Officers at 11.00 A. M. Dr. John C. Calhoun asked to have his name withdrawn, and made a motion that Dr. Bartlett be elected by acclamation, as a testimonial of his long service to the Homœopathic Medical Profession. This motion was seconded by Dr. Moreland.

The secretary cast the ballot for the election of the nominees for other offices.

Dr. Ralph Bernstein offered an amendment to the By-Laws providing for an Army and Navy membership list. This amendment provided that all homœopathic physicians serving in the United States Army and Navy, having a legal residence in Pennsylvania, or on assigned duty in the State, may be elected to the Army and Navy roll of membership, without payment of dues, and with all membership privileges.

Dr. Bartlett seconded Dr. Bernstein's motion, and explained that this was in accordance with the American Medical Association's organization. Pennsylvania has some men who are already making themselves famous in the Army and Navy. It is only necessary to state that the most decorated of medical officers during the late war was one of our own number. Carried.

The business sessions of the Society were then declared adjourned.

PUPILLARY REACTION FROM THE USE OF ADRENALIN.—Leowi's reaction is as follows: One per cent. solution of Adrenalin is dropped into the conjunctival sac of one eye at intervals of five minutes, and after a lapse of a certain time, examination is made as to the size of the pupils. The pupil begins to dilate in from five to fifteen minutes after instillation and attains its maximum in from one to two hours in weakly positive cases, while in cases with a strong reaction, traces of mydriasis remain even after thirty hours. The test is used to determine pancreatic insufficiency. The instillation of adrenalin in normal individuals does not cause mydriasis. Kato and Watanabe (*Ophthalmic Literature*, June, 1921) find that in malignant disease of the head of the pancreas marked mydriasis occurred, while in carcinoma of the bile ducts and liver without involvement, there was no reaction. They also found that the reaction occurred in many cases of chronic nephritis, but in very few cases of acute nephritis. They also got positive reactions in Basedow's disease.

SARCOMA OF THE LARGE INTESTINE

BY

S. W. SAPPINGTON, M.D., PHILADELPHIA

CASE REPORT.—T. M., aged 62, engineer, a big man and a drinker. The chief complaints were colic and bloating with gas. The taking of food so aggravated the pain that the patient had finally cut himself down to a liquid diet. At the same time there was increasing difficulty with bowel movements, even enemas producing only liquid stools. The patient felt a lump in the abdomen. During the last eight months, he became pale and anemic and lost 50 to 60 pounds. April 6, 1921, he entered the Hahnemann Hospital.

Examination revealed a large mass in the right iliac fossa. There was no enlargement of the liver and the gall bladder was apparently normal. The stomach was negative. The roentgenologist reported an obstructive tumor within the caecum.

At operation (Dr. G. A. Van Lennep), a pedunculated growth was found involving the caecum and ascending colon. The attachment began at the ileo-caecal valve and extended up the caecum and colon a distance of 7 or 8 cm. along a path 2 to 3 cm. in width. Springing from this relatively large base, the tumor formed one elongated mass filling and distending the caecum and ascending colon up to the hepatic flexure. There were no attachments save the one described and the neoplasm within the intestine consisted of cauliflower-like growths easily broken off in operative manipulations. Along with the tumor, the caecum, lower ileum and a portion of the colon were removed and the ileum anastomosed to the colon with a Murphy button. During the operation Dr. Van Lennep felt a nodule in the right lobe of the liver. The patient lived eight days and died of peritonitis. Necropsy was not obtained.

The specimen received in the laboratory consisted of sectioned portions of caecum and ileum and the tumor, which had become detached from its base. The ileum was entirely free of neoplasm; the appendix likewise was negative. The caecum was distended and showed some infiltration at the site of tumor attachment, but the involvement of the intestinal wall was slight and the greater portion of the caecum and

the entire ascending colon were quite free of malignant penetration. The tumor consisted of a nodular mass 11x6 cm. and numerous, detached, cauliflower-like pieces which had broken off with handling. Collectively, the tumor masses weighed 310 grams. The growth was white and easily broken but it was not soft in the sense of degeneration. Rather the friability was that associated with neoplasms which are almost entirely cellular.

Microscopic examination of the large and small fragments showed a perfectly typical spindle cell sarcoma, uniform in appearance throughout. Mitotic figures were numerous among the large spindle cells. There was little evidence of degeneration. Examination of the intestine where the tumor was attached showed some infiltration of the muscular layer, but this was not extensive and the intestine elsewhere was free. The appendix was normal. As far as one could reason from the intestinal sections, the growth had arisen in the submucosa and grown outward in papillary form, leaving the wall of the bowel almost entirely free.

COMMENT.—Sarcoma of the intestine is rare, sarcoma of the large intestine is rarer and spindle cell sarcoma of the large bowel is rarest of all the intestinal sarcomas. The object of this paper, however, is not the report of a rare case nor an attempt to review the literature of sarcoma of the intestine. Those interested in the latter should consult the publications of Baltzer, Libman, Jopson and White, Lecene, Corner and Fairbanks, Elliott, Goto, Crowther, Speese, Graves and Goldstein. The problem that this case suggests to us is, given a rare malignant neoplasm of the intestine, is an early and correct diagnosis possible? Following are some considerations that may be of value in this respect.

Attention may first be called to tumor of the intestine by symptoms local and general, the presence of tumor, or complications. Local symptoms, such as diarrhea or constipation, abdominal pain and distention may take on a suspicious aspect when accompanied by general symptoms such as emaciation and cachexia and lead to laboratory and X-ray investigation. The presence of tumor with possibly stenotic pressure or metastatic evidence is a diagnosis in itself and requires roentgenologic localization. A complication such as intussusception may be the first definite hint of bowel growth. In 300 cases of intussusception in adults, Eliot and Corscaden

found 100 cases due to tumor. Of these 60 per cent. were benign and 40 per cent. malignant tumors of the intestine. Kasemeyer collected 208 cases of invagination of the gut due to tumor, 55.75 per cent. of which were benign growths. Intussusception in adults is, therefore, a suggestive sign of tumor. It will be noted that it is much more common in benign than malignant tumors. This is only partially indicated in the percentage predominance because malignant neoplasms are so much more frequent than benign tumors. On the other hand, benign growths may be clinically silent until announced through symptoms of intussusception.

Tumor of the intestine now being suspected, a definite diagnosis, at least for the large bowel, should be comparatively easy with the aid of the roentgenologist. From the roentgenogram, we should learn the location of the tumor and the presence or absence of stenosis or dilatation. Tumors of the small intestine may be much less susceptible to roentgenologic diagnosis and dependence is then thrust on clinical and laboratory data, among which occult blood and sugar tolerance tests may be valuable.

Tumor of the intestine now being diagnosed, statistics furnish the rule of probability. For instance, of all carcinomas, 8 to 10 per cent. involve the intestine. Of these about 97.5 are found in the large intestine and only 2.5 per cent. in the small bowel. Of cancer of the large bowel, from 50 to 64 per cent. are in the sigmoid and rectum. With the stomach furnishing 30 to 40 per cent. of all carcinomas and the great intestine 8 to 9 per cent., there is a curious cancer immunity in the small gut. Cancer increases in frequency from the caecum to the rectum. Sarcoma frequency is illustrated in Nothnagel's oft quoted figures. Of 2125 carcinomas, 243 occurred in the intestine; of 274 sarcomas, 3 involved the intestine; and of 62 lymphosarcomas, 9 were of the bowel. Heimann's statistics show that in two years 1706 patients in Prussian hospitals died of carcinoma of the intestine, while Nothnagel states that only 12 cases of intestinal sarcoma came to autopsy in twelve years in Vienna and Smoler reports only 13 cases in fifteen years in Prague among 13,036 autopsies. Though carcinoma is much more frequent than sarcoma in any part of the intestine, the relative frequency of cancer in the large and small bowel is reversed in the case of sarcoma, for the latter is relatively common in the small in-

testine and rare in the large. In 1904, Corner and Fairbanks collected 175 cases of sarcoma of the intestine. In 1913, Crowther found 191 cases. And in 1919 Graves, in an exhaustive search of the literature, collected 246 cases of lymphoblastoma, these including most cases of round cell sarcoma and, therefore, most intestinal sarcomas. Of Corner and Fairbanks' cases, 65 were in the small intestine, 20 ileo-cæcal, 11 colon and 7 in the rectum. Of 129 cases in which the location was mentioned, Crowther found 113 in the small bowel, 8 in the cæcum and 8 diffused through the intestine. Crowther, however, overlooked the paper of Jopson and White in which 22 cases of sarcoma of the large intestine were collected. Sarcomas of the small gut seem to increase moderately in frequency from the duodenum down to the ileo-cæcal valve. Of sarcomas of the large intestine, about 50 per cent. occur about the cæcum and ileo-cæcal region and about 18 per cent. in the transverse colon. Goldstein has recently collected 18 cases of sarcoma of the appendix. The rectum is vaguely referred to as a frequent seat but late statistics do not confirm it. Most of the sarcomas are of the round cell and lymphosarcoma types. Of 170 cases cited by Crowther, 68 were round cell, 48 lymphosarcoma, 22 spindle cell and the remainder sub-varieties. Of 20 sarcomas of the large intestine, Jopson found 50 per cent. round cell, 45 per cent. lymphosarcoma and 5 per cent. spindle cell. Of benign tumors of the bowel, Dewis in 1906 collected 219 cases. Stetten, in 1909, reported 74 cases of submucous or internal lipoma of the intestine. Hake, in 1912, collected 58 intestinal myomas. James and Sappington, in 1917, found 24 case reports of fibroma of the intestine and added one of their own.

What diagnostic deductions may be drawn from these figures? If tumor of the intestine is diagnosed, it may be assumed, other things being equal, that it is a carcinoma. Benign tumors that are clinically evident and sarcomas are in actual numbers so few compared to carcinoma that the last diagnosis is a pretty safe one. If the tumor is of the large intestine, the diagnosis of carcinoma becomes almost a certainty. If the tumor is of the small intestine, it is still likely to be a cancer, for while sarcoma is relatively more frequent here than in the large bowel, it is uncommon compared to carcinoma even in the small gut. On general principles, then, a tumor of the intestine should be diagnosed carcinoma.

Are there any peculiar or suggestive signs pointing to sarcomatous rather than cancerous growth when a malignant tumor is diagnosed? Sarcoma of the intestine is most common between twenty and forty years of age, but an intestinal tumor in a patient under fifteen years is much more likely to be found a sarcoma than at any other period. The age of our patient is a striking exception. The classical history of sarcoma of the intestine is that of an individual under forty with a peculiar pallor or lividity and a large, movable tumor which has grown rapidly and is accompanied by profound cachexia and emaciation. External glandular enlargements are usually absent. Tenderness, as a rule, is absent, but may be present in sarcoma of the large bowel, which is frequently felt in the right iliac fossa. According to Schmidt, edema of the legs with little or no ascites favors sarcoma. All writers stress the absence of stenosis in sarcoma of both the large and small intestine. Not only may obstruction be absent, but on the contrary there is characteristically dilatation, sometimes aneurismal in form, due to early infiltration and paralysis of the muscularis with subsequent distention by gas and feces. If obstruction is present, it may be due to intussusception, volvulus or adhesions. Later writers have pointed out that partial stenosis due to the tumor is present in more cases than at first realized. In Corner's case of spindle cell sarcoma and in our case, stenosis was marked.

Benign growths of the bowel are undoubtedly rare but they are probably not much more so than sarcoma. Part of this rarity is due to the fact that they are commonly clinically silent and only come symptomatically to the surface with complications such as intussusception. Or they may acquire malignant properties, not uncommon with polyposis. Modern methods, as roentgenoscopy, will increase their clinical frequency in the future. The absence of symptoms of malignancy and the general good health of the patient when intestinal tumor is diagnosed speaks for a benign growth or a very early diagnosis of a malignant one.

SUMMARY.—By modern methods and careful attention to clinical detail, an accurate diagnosis of tumor of the intestine is possible in the large majority of cases. Statistics teach us that this tumor is in all probability a carcinoma. Such a diagnosis will be correct in at least nine cases out of ten. The evidence for sarcoma or benign tumor of the bowel is not

specific enough for a positive opinion—here the diagnosis must be provisional. The absence of stenosis in the case of sarcoma and the presence of intussusception in the case of benign tumor are suggestive signs. While an accurate diagnosis of tumor of the intestine is attainable, as much cannot be said for an early diagnosis. This is largely due to the vagueness and apparently trivial nature of the abdominal symptoms in the beginning, whereby valuable, expensive means of investigation are not at once sought by the patient or employed by the physician. An early and frequent resort to roentgenoscopy should reduce the late diagnoses decidedly. The case here reported is an example of the exceptions practically encountered—the rarest of the rare intestinal sarcomas occurring at 62 years of age.

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CHRONIC INDIGESTION IN CHILDHOOD

BY

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(Read before the Central Homeopathic Medical Society of Pennsylvania at York, Pa., June 16th, 1921.)

THE term chronic indigestion is applied to a group of cases in which a disturbance of the digestive function with resultant malnutrition are the leading clinical features. In some instances gastric symptoms predominate while in others the intestinal tract is chiefly affected. In the majority of instances it is, however, impossible to draw a sharp line of distinction between the symptoms which result from a deranged gastric function and those due to the associated intestinal derangement. It is well to bear in mind that we are usually dealing with a child whose entire alimentary tract is in a sub-normal condition and that under such circumstances there is no practical value in attempting to differentiate between a gastric indigestion and an intestinal indigestion.

The results of chronic indigestion are far reaching upon the child's general health. Primarily, malnutrition and anemia develop from a failure of the proper digestion and assimilation of the food. The child becomes irritable and peevish and may develop serious nervous symptoms. The latter are either due to the malnutrition or they may be toxic in character from an intestinal toxemia.

The dyspeptic symptoms which are commonly observed in these cases are loss of appetite or a perversion of the same; distress after eating and other gastric disturbances such as belching, nausea, vomiting, heartburn and pylorospasm; intestinal flatulency and abdominal pains; diarrhea or constipation.

ETIOLOGY.—Chronic indigestion may result from long-continued dietetic errors especially when these date back to infancy. Overfeeding or the use of a food not suited to the child's digestion, such as fat or starchy foods in excess may result in serious disturbances difficult to eradicate. In older children an improper diet is frequently found responsible for the indigestion, or we may find that the child is drinking excessive quantities of milk, especially with its meals, or eating

between meals, and thus overtaxing its digestion. There may be a subnormal tolerance for certain food elements, notably for fat and sugar. Such children are likely to develop attacks of recurring vomiting or fever of intestinal origin when they overstep the tolerance for these foods.

Constitutional causes are frequently operative. A neuropathic or a gouty heredity; a frail constitution with a "Stiller type" of build, namely a long, narrow chest with acute costal angle, marked mobility of the tenth rib and tendency to enteroptosis, are strong predisposing causes.

Chronic infections like tuberculosis and focal infections in the tonsils and teeth may be etiological factors. Some cases date back to an acute infection of the gastrointestinal tract from which the child has never fully recovered but which marks the beginning of the present trouble. Carious teeth and malocclusion should always be looked for in chronic indigestion.

Mechanical factors are atony of the stomach; dilatation and ptosis of the stomach; ptosis of the colon; dilatation of the colon; long, angulated sigmoid.

Dilatation of the stomach may result from dietetic errors in infancy or from pyloric obstruction during infancy, or it may develop as a symptom of rickets. In older children it can develop from overloading the stomach, especially if there is *gastric atony*. Ptosis also may lead to dilatation by causing a delay in the emptying time of the stomach. An atonic stomach readily dilates if kept continuously overfilled and serious toxic symptoms may occur in conjunction with food retention in such a stomach.

Intestinal stasis from a ptosed or dilated colon or an elongated sigmoid may be responsible for the development of an *intestinal toxemia*. The symptoms referable to intestinal toxemia are varied, prominently among which may be mentioned nervous irritability; headache; disordered sleep; enuresis; recurring fever; chronic skin eruptions. Kerley (*Amer. Jour. Diseases of Children*, April, 1920) reports a series of interesting roentgen ray studies in children with gastrointestinal disorders and points out the importance of making use of roentgenograms in the diagnosis of these affections. The abnormalities which were demonstrated were pylorospasm; dilatation and ptosis of the stomach; dilatation of the

colon; ptosis of the colon and elongated and angulated sigmoid.

SYMPTOMS.—The symptoms will depend largely upon the type of case, that is, whether the trouble is chiefly dietetic or whether we are dealing with a condition which is mainly mechanical in nature. Cases in which gastric symptoms predominate will show decided disturbance in the appetite, and if there is atony, gastric splashing can be demonstrated in the stomach region. As a rule, there is distress in the epigastrium after eating and tenderness to pressure in this region. When there is ptosis with delayed emptying and retention of food recurring attacks of vomiting frequently occur. In the intestinal form there is diarrhea; peristaltic unrest; abdominal pains, mucus in the stools together with undigested fat and vegetable deritus and usually abdominal distention.

Fat indigestion is the predominating feature in some cases. This is characterized by the presence of abnormal amounts of fat and fatty acids in the feces, the stools being loose and acid in reaction. The underlying cause is usually a pancreatic insufficiency.

In carbohydrate indigestion the stools are liquid, of a gruel-like consistency and yellow color, they are frothy, due to fermentation and their reaction is acid. There is little or no mucus. Undigested starch granules can be demonstrated by microscopic examination. There is usually much gas in the intestines and the abdomen is distended. The severe type of intestinal indigestion in which there is both fat and carbohydrate indigestion with associated malnutrition and prominent abdomen is clinically best known under the name of "*Coeliac Disease*."

MUCOUS COLITIS is usually associated with protein indigestion; at least these cases are benefited by a diet from which proteins are excluded and which consists chiefly of green vegetables and cereals. In mucous colitis there is a tendency to constipation; the stools are large and formed and are usually coated with tenacious mucous. At times mucous casts of the intestine are passed with colicky pains. Nervous symptoms and malnutrition are associated.

INFANTILISM.—There is a type of malnutrition with stunted growth due to chronic intestinal indigestion, which was first described by Herter and named by him Intestinal Infantilism. Children presenting this condition are stunted

in growth; the abdomen is large; the stools are abnormally large, containing an excess of fat and fatty acids and the bacterial flora is predominatingly Gram-positive. A marked indicanuria is also observed.

DIAGNOSIS.—The diagnosis of chronic indigestion, particularly of the intestinal type, can usually be made from the appearance of the child alone. The malnutrition, anemia, stunted growth in cases of long standing and the prominent abdomen are quite characteristic. The condition of the bowels is also of diagnostic value. Diarrhea is usually present in the earlier stages; the stools being large and containing beside undigested food particles an abundance of mucous. They are abnormally offensive and when fermentation is a prominent feature they are acid in reaction and are expelled with a great deal of gas. Undigested fat is present in large amounts as well as some unaltered starch when this has entered largely into the diet. In the later stages the stools are apt to become constipated, usually being pale in color and abnormally large. The stool is often coated with mucus.

In young children the differential diagnosis between *chronic intestinal indigestion* and *tubercular peritonitis* must be made. The latter is excluded by the absence of a continuous fever, the abdominal tympany without evidence of fluid or enlarged mesenteric glands and the negative von Pirquet reaction.

HIRSCHSPRUNG'S DISEASE presents enlargement of the abdomen due to dilatation of the colon, but this is a congenital affection, and a history of obstinate constipation with enlargement of the abdomen dating back to early infancy can be obtained. Furthermore, in Hirschsprung's disease there is hypertrophy as well as dilation and the thickened walls of the colon can be felt readily while peristaltic waves are usually clearly visible.

In older children it is important to eliminate other diseases such as chronic appendicitis, tuberculosis, focal infections and intestinal parasites in the diagnosis of a primary digestive derangement. The X-ray is of the greatest value in demonstrating the mechanical conditions which are responsible for many of these cases.

TREATMENT.—The treatment must be both hygienic and dietetic. Since the digestive function is so largely dependent upon a good supply of blood and draws upon the energy of

the organism to a large extent, fresh air and ample sleep are of great importance. Children belonging to this class are usually poor sleepers and they should, therefore, be made to rest at least half an hour after every meal. Proteins, especially beef-juice, finely minced rare meat and albumin-milk (Eeweissmilch) are well borne. Buttermilk is also a good food in these cases. Strained green vegetables are useful and together with beef-juice help to overcome the anemia. Since fat and carbohydrate indigestion are the leading features of the majority of cases a high protein diet is, as a rule, useful. In cases with intestinal toxemia, especially constipated cases with stasis or ileocecal regurgitation and in cases of mucous colitis, a carbohydrate and vegetable diet must be employed. All cereals must be cooked for several hours and milk should be boiled. Often preparations like Dryco and Malt Soup agree better than fresh milk. Zwieback is better digested than bread or toast.

Irrigation of the bowels is of value in the cases with loose offensive stools and constipation should be treated with massage and low enemata rather than with laxatives. Liquid paraffin is sometimes of distinct value in the constipated cases.

An abdominal support will be required, for a time at least, by most cases.

Cases in which constipation is present will be benefited by one of the following remedies, selected upon its characteristic symptoms:

Calcarea carb.—Rachitic and scrofulous children; fair complexion, tendency to perspire. Prominent abdomen; clay colored, putty-like stools.

Carbo. veg.—Gastric flatulency; sour eructations; slow digestion.

Hydrastis canadensis.—This is a good bitter tonic in small doses and is especially useful in chronic catarrhal affections of the gastrointestinal tract with atonic dyspepsia and constipation with mucus in the stools.

Lycopodium.—Lithemic cases; distended abdomen; hard constipated stools; urine shows a brick dust deposit of uric acid crystals. Child has a capricious appetite and is very fretful, after sleep.

Mercurius vivus.—Tongue heavily coated; foul breath; chronic nasopharyngeal catarrh; slight enlargement of the liver; pale, grayish stools.

Nux vomica.—Gastric symptoms predominate. Distress after eating; poor appetite; headache and nausea frequently occur. The child is nervous and fretful; abnormal appetite at times preceding attacks of indigestion; recurring vomiting.

When diarrhea is a characteristic feature the following remedies will be called for:

Calcareo phos.—Anemia and malnutrition; sunken flabby abdomen; green, slimy, fetid stools.

Mercurius corrosivus.—Dysenteric type of symptoms. Blood frequently present in the stools. The lower colon is chiefly involved.

Magnesia carb.—Sour, frothy stools, containing large amounts of undigested fat particles.

Phosphoric acid.—Painless watery stools; abdomen greatly distended. There is marked prostration and exhaustion.

Sulphur.—Chronic diarrhea, worse in the early morning hours. The stools are watery and irritating. Chronic skin affections are associated.

REMEDIES AS APPLIED TO FAILING CARDIAC ENERGY

BY

W. C. SEITZ, M.D., GLEN ROCK, PA.

(Read before the Central Pennsylvania Homœopathic Medical Society,
August 11, 1921.)

THE most important element in the treatment of any defect in the cardiovascular machine is absolute rest, and as far as is possible in the recumbent position. It is furthermore of importance that the bowels, kidneys and skin should function properly.

The next question to consider is that of depressants and stimulants. The best sedative for an excited heart is the application of an ice bag over the præcordium. Very important also is the regulation of the temperature of the body by suitable clothing. In obstinate cases a canthos plaster, permitted to remain on long enough to produce a good blister, is of value. Among stimulants I find that aromatic ammonia, either by olfaction or by mouth, is the most satisfactory, especially for temporary relief. Other agents having a like action include hot coffee or caffeine; teaspoonful doses of whiskey or brandy every few hours where stimulation must be continued, as following a crisis in an acute disease like pneumonia. In pre-

scribing these measures good judgment must be used; one should never stimulate too early, or too much. The condition of the stomach has its effect on the heart, hence diet figures prominently in the treatment of cardiac disturbances. Under no circumstances should the patient be over fed. In many instances the Karrell diet is beneficial, especially when there is general anasarca.

Aconite.—The first remedy in most diseases, also fits in the circulatory system, and should not be neglected; the guiding symptom is the intense fear of certain death. Use it in the higher potencies—30th.

Rheumatic Heart Remedies.—*Aconite*; *digitalis*, *actea racemosa*; *kalmia latifolia*; *rhus tox.*; *pulsatilla*. These remedies have a numbness in left arm in connection with heart disturbance, and should be carefully differentiated.

Digitalis has a more limited sphere of action than was formerly thought. It is the undisputed remedy in auricular fibrillation. When a material dose must be used of a reliable preparation, take the powdered leaves in 1 gr. capsules every four hours, until the heart action is steadied and slower; then farther apart until normal action is secured, when it should be discontinued. It should be used in potency when there is a slow heart with decided weakness of impulse. The patient must be kept very quiet to prevent intermissions and sudden increase in rapidity; there is marked cyanosis of the body with a fear of the heart stopping if the patient should move.

Gelsemium.—The patient has roused out of sleep with rapidly acting heart, with a sensation as if it would stop beating if he keeps quiet. He is impelled to move about to keep the heart going; fullness in head; double vision; general tremor of the body.

Chelidonium has an intermittent pulse missing every three or four beats, with hot pains in the liver region, especially under the right scapula.

Strophanthus.—In doses of five or ten drops every four hours. In the beginning there is cardiac dilatation, with general anasarca.

Cactus grandiflorus.—There is a constricted sensation about the heart, as if it were grasped by a hand. Very satisfactory results are obtained with ten drops of the tincture, four times a day, especially when there are marked kidney complications. In one case it relieved the dyspnoea, albumin lessened, and there was general improvement.

Lilium tigrinum is a companion drug to cactus, with the constriction about the heart, usually indicated in females when the pelvic symptoms of the remedy are present.

Collinsonia 1x cured a case of very unpleasant constriction about the heart with bleeding hemorrhoids.

Apis met. in heart failure when the general appearance of apis is present, no thirst, very despondent, marked dyspnoea, patient does not see how he can get another breath.

Apocynum cannabinum in 2 gr. pills of extract, 1 pill every 6 hours; general anasarca, dyspnoea, great thirst, had best results in cases of mitral regurgitation and marked ascites.

Arsenicum alb. 3x trit. in chronic endocarditis, marked prostration, great restlessness, with anxiety, dyspnoea from the least exertion. I have had good results with this drug in old cases which have run a course of digitalis infusion, and the system will not respond to it any more.

Lachesis 30. in old cases, must have everything loose about the neck to avoid sensation of suffocation, always sleeping into a condition of suffocation, cyanosis and dyspnoea. I have had very satisfactory results with this drug in the aged, and those who were addicted to the use of liquor.

Sparteïn in 2 gr. doses has been a blessing to the old water-logged cases who cannot be in the recumbent position, must sit up to breathe; in this dose it has produced a great deal of comfort to these unfortunates.

Fatty and senile conditions consider *Ars. alb.* and *iod.*—*Phos.* and *Arn.* also *rhus tox.* especially if one can get a history of over-exertion.

Stabbing pains of endo- and peri-carditis—*Spig.*, *Bry.* and *Sulph.*

Bradycardia—*Kalmia digitalis.*

Crategus tincture 20 drop doses in slow pulse, air hunger, mitral insufficiency, beginning dilatation, and crushing pain under the left clavicle.

Tachycardia.—*Acon.*, *naja.*, *cactus*, *arn.*, *lycopus* 3x (in exophthalmus), *Lycopodium*, 30.

Arteriosclerosis with Vertigo.—*Aur. natr. mur.* 3x, *Aur. met.*, *Mang. phos.* 12x.

The much used strychnia as a heart medicine is not used as it was thirty years ago. I have found it detrimental instead of beneficial, and have had results from *nux vomica* 1x

trit. in cardiac disturbances when the gastric symptoms suggested this remedy.

Glonoine 3x in arteriosclerosis, throbbing headache, and high blood pressure.

Vedatrum Vir. tincture, drop doses in water every hour, in high blood pressure with kidney lesion.

Veratrum Alb. in extreme prostration and collapse, with cold perspiration on the forehead.

Carbo veg. 30 to 200 in collapse; must be fanned; great air hunger.

Camphor in oil in material doses in extreme collapse; large doses must be used hypodermically, preferably in the abdomen, but personally I have never had any appreciable results.

FAILING CARDIAC ENERGY: PRACTICAL POINTS IN ETIOLOGY, DIAGNOSIS AND TREATMENT

BY

RALPH E. PILGRAM, M.D.

(Read before the Central Pennsylvania Medical Society at Columbia, Pa., August 11, 1921.)

MUCH has been written by eminent authorities on this subject, both technical and practical. But with all this, from time to time, new experiences, new complications, and careful statistics ever broaden our horizon, and as yet, even in this modern age of research and scientific investigation, much remains to be developed as to etiology, diagnosis, and treatment of this condition. It is then, with no apology and from the standpoint of the general practitioner that the following remarks are made. The condition of the heart is constantly being brought to the attention of the general practitioner in so many ways and with such vital import that it seems to the writer that he is the one who must be prepared at all times to meet these serious conditions quickly and accurately. It was surprising to note, in preparing this paper, how many statistics tend to prove that heart cases admitted to hospitals by general practitioners were misdiagnosed, or, if properly diagnosed, physiological stimulation was given in decidedly improper dosage, so that patients were either suffering from lack of a drug or too much of it. That heart conditions are on the increase is indisputably proven by both army and life insur-

ance company statistics. Modern hygiene and modern medicine have almost eradicated deaths from typhoid, diphtheria, etc., yet according to latest statistics the average life is only 27 years. Heart, bloodvessel, and kidney conditions are largely responsible for this low average. The American Life Extension Institute reveals these facts: Organic heart disease 16.2 per cent.; thickened arteries 42.4 per cent.; blood pressure, high or low, 26 per cent.; urinary changes, albumin, sugar and casts 39.8 per cent. These include only moderately or seriously affected cases. Many more were found to suffer from some circulatory or urinary difficulty of a minor degree. Other statistics bear out these same averages, which show the seriousness of the problem the medical profession of America today is compelled to confront. These are sufficient to indicate that American business methods, while a great success from a financial and productive standpoint are proving a lamentable failure from a health standpoint.

ETIOLOGY.—By the term “failing cardiac energy” we mean to indicate that condition in which the heart fails to carry on adequately the general circulation.

The failure may be sudden as in pulmonary edema following coronary disease and myocarditis, or gradual as in chronic heart disease.

Barringer of New York gives us an interesting record of his cases as regards the etiology of this condition: Of 154 cases, 117 had valvular disease, and 37 had myocardial disease. Five gave a history of physical strain immediately preceding the early symptoms, and two mental strain. In 18 cases the early symptoms followed directly some infection like bronchitis or influenza. One hundred and seventeen cases showed fever of varying degrees, running a course of from a few days to many weeks. Sixty-nine showed an increase of polynuclear. This is interesting because fever and leukocytosis in patients with failing hearts has generally been considered as due to pulmonary congestion or general venous congestion. The newer idea and the one that Barringer thinks most likely, is that of an infectious process in the heart itself.

In the etiology of heart disease there are really two equal active factors: (1) predisposing, (2) exciting.

Under predisposing factors should be considered racial tendency, hereditary familial qualities, health of parent during gestation, nutrition during infancy and later life, hygienic environment, social and economic status, hereditary and ac-

quired immunity to infections, etc. The broader our viewpoint in these cases the more we consider these predisposing factors. They form the physician's mental background of a case.

Among exciting factors, the important cause of cardiovascular disease is to be found in the infections. Osler says that endocarditis occurs with rheumatic fever, tonsillitis, scarlet fever, pneumonia, chorea and rarely in measles and chicken-pox, and that acute myocarditis occurs with typhoid and diphtheria. The causes of acute myocarditis degeneration are given as diphtheria, typhus and typhoid, also rheumatic fever, scarlatina, variola and influenza. Chronic myocardial degenerations are said to be due to or produced by valvular lesions and the chronic infections.

Etiology of the myocardium disorders according to the Mayo Clinic statistics show in order of frequency (1) degenerative processes, (2) infections, local and nutritional disturbances and finally congenital heart disease. Syphilis plays an important part in the etiology also.

The heart is really a muscle and anything that impairs its function could bring on a heart attack. Long periods of physical strain without proper rest periods might exhaust the heart muscle. Arterial degeneration with rise of blood pressure may make sufficient circulation difficult. Disturbances of rhythm may impair cardiac force and regularity.

Whatever the etiology of a particular heart condition may be, it is important, for the removal of the cause is an important part of the treatment.

DIAGNOSIS.—The early recognition of failing cardiac energy is a matter of great importance, both from a diagnostic and from a therapeutic standpoint. The physician who waits until edema of the extremities, passive congestion to the liver and lungs appear before recognizing or even suspecting that the heart is incompetent is rarely likely to be successful in the management of his heart cases.

The disturbances leading up to failing energy are at first purely functional and so the symptoms are purely subjective. Patients should be classified, therefore, according to their functional capacity, and for this it seems well to adhere to the classification given out by the Association of Cardiac Clinics:

Type I.—Patients having heart disease but who have never been decompensated.

Type 2.—Patients having heart disease who have been decompensated, but who are now compensated.

Type 3.—Patients having heart disease and who are now decompensated.

Type 4.—Cases of possible heart disease.

Type 5.—Cases of potential heart disease.

When the patient first appears before you he should be regarded as one of these types according to the conditions presented.

The chief subjective symptoms of failing cardiac energy are:

(1) *Respiratory*.—Shortness of breath, pressure over the sternum and cough.

(2) *Cerebral*.—Giddiness, vertigo, mental fatigue and headache.

(3) *Gastro-intestinal*.—Flatulent dyspepsia, nausea and loss of appetite.

(4) *Cardiac*.—Pain or discomfort and palpitation.

The physical signs of failing cardiac energy are:

(1) Disturbances in rate and rhythm of the pulse (premature contractions, fibrillation, alternation, etc.)

(2) Enlargement of the area of cardiac dullness.

(3) Impaired muscle tone in the first sound.

(4) Weakness or accentuation of the second sound.

(5) Murmurs of any variety.

(6) Passive congestion, edema of legs and lumbar region, swollen liver, cyanosis.

Barach of Pittsburgh presents what he calls the energy index of the circulatory system. In brief he says that all that has been said of the measurable functions of the circulatory system, there are but three established factors: (1) the systolic pressure, (2) the diastolic pressure, and (3) the pulse rate.

He proposes an index which he calls the S. D. R. Index, and which is based on these three known factors: For example, if a given case presented 120 mm. of Hg. as the lifting force of the systole, and the diastolic force equal to 80 mm. of Hg. then the force of the pulse beat which comprises both phases is 200 mm. of Hg. This multiplied by the number of beats indicates the total force per minute. He considers that neither the pulse rate, nor the systolic pressure, nor the diastolic pressure taken alone give sufficient information con-

cerning the circulation. He cites the effect of gravity, the effect of effort, and the reaction to epinephrine on the circulatory system as indicated by the proposed index, and in each instance there is the expected increase. The index indicates the degree of activity of the circulatory system. It does not help to distinguish cardiac load from over-load, nor cardiac strength from cardiac weakness. It does indicate the amount of energy expended by the circulatory system in the performance of its function, and it gives information which is not obtained from any one or two elements of the triad on which it is based. Concerning the normal index the author has found that the upper limit is 20,000 mm. of Hg. a minute.

In this connection it might be well to add that many men use the pulse pressure as a guide to the load the heart must carry with each ventricular contraction. This is obtained by subtracting the diastolic pressure from the systolic pressure, the result being the pulse pressure. Personally I regard this as a very valuable aid in estimating the amount of work the heart has to do, and its over-load. When the pulse pressure is above 60, I consider that the heart is then under a strain which will sooner or later exhaust the heart muscle, unless it can be relieved.

The effect of "effort" is also an important method of examining the heart. The patient is made to do 20 knee bends or some such standard exercise and the effect noted on the heart with the patient in the horizontal position. A heart with plenty of reserve force will not show an increase in rate, while one with little or no reserve force will be greatly increased in rate and any murmurs present will be brought out more distinctly. With the patient in the horizontal position the heart should return to its normal in about two minutes. Longer intervals lead one to be suspicious of its reserve and recuperative powers.

Whatever our diagnosis of a given heart condition may be, the one thing to be considered finally is its functional capacity, for after all that is the thing which really concerns the patient.

TREATMENT.—The object of all treatment in all heart cases is to restore the exhausted heart muscle and re-establish a competent circulation. Do not attempt to remove valvular conditions, to absorb calcareous deposits, or any other impossibility in cardiac therapeutics, but remember what is curable

in heart disease and go ahead, thus saving valuable time for your patient and needless worry and disappointment for yourself.

Rest naturally holds a most important place in cardiac treatment. The heart receives its nutrition during the period of diastole, and it is only by lessening exertion and lengthening diastole that we can improve the nutrition of heart and the burden placed upon it.

In severe cardiac cases absolute rest in bed is imperative to successful treatment. All efforts of any kind, both mental and physical, should be prohibited.

In the milder cases it may be merely necessary to restrict the amount of daily work and to take more rest in the recumbent position than he has been accustomed to doing as rest for an hour or two in the middle of the day.

DIET.—There is no specific diet for all cases. The stomach is not only a near but bad neighbor to the heart, and nothing should be contained in the diet that tends to produce gas. When the digestive powers are reasonably good and the heart not seriously embarrassed, a diet consisting of milk, eggs, soft vegetables and a moderate amount of meat may be permitted. In severer cases, especially those associated with edema, the diet must be decidedly restricted. Orange or lemon albumin, and milk in some form, about 24 oz. in 24 hours. Tea, coffee and tobacco should be discontinued, and usually salt in appreciable amounts. In extreme cases of general anasarca, the Karrel Diet, 6 oz. of milk every six hours is best.

EXERCISE.—In chronic cases rest can be carried too far. Proper exercise is important for every organ in the body and the heart is no exception. Exercise should, however, be carefully regulated, with no sudden exertion and should be followed by periods of rest. The pulse rate, pain about the heart, or exhaustion are guide posts in the matter of exercise.

MENTAL ATTITUDE.—Care should always be taken in speaking to a cardiac patient in regard to their condition, for if they are assured that they have a serious cardiac disease they may spend years of mental suffering. It is kinder and better to err on the side of too great optimism, for should death occur sooner than prognosticated, the friends are likely to excuse the mistake in judgment, because possessed by the notion that heart disease may cause death unexpectedly at any

time. On the other hand, if the patient is filled with the fear of premature death and yet does survive a dozen years or more, the friends are very likely to conclude that the physician did not know his business, or made a wrong diagnosis. Besides, there is the benefit physically and mentally of putting hope and courage into our heart patients, instead of rendering their remaining years miserable by reason of fear.

MEDICATION.—The medicinal treatment of failing cardiac energy can best be considered under two headings:

(1) Physiological Medication

(2) Homœopathic Medication.

Each method of medication has its definite place in cardiac therapeutics and each has its positive and distinct indications.

So-called cardiac stimulants should be administered with the utmost care and judgment, and their indiscriminate use is mentioned only to be condemned.

Digitalis.—*Digitalis* is always thought of first in severer cardiac conditions but it has its limitations, and in many heart cases it has given practically no results. *Digitalis* is a "pace maker" for the heart and its principal use is its ability to control fibrillation of the auricles. In auricular fibrillation it will nearly always bring the answer.

One difficulty in prescribing *digitalis* today is to get a reliable preparation. Many tablet forms on the market today are practically inert, especially those compounded with other medicines. The best policy is to select three or four preparations of known efficiency, familiarize yourself with them both as to their individual virtues and dosage, and stick to them.

The Tincture of Digitalis.—The principle of *digitalis* medication is to first digitalize the heart, and then to find its "digitalis equilibrium," which dosage the patient can take indefinitely without fear of over-digitalization. The common error is to under-digitalize rather than to over-digitalize. The dosage of *digitalis* must be fixed for each individual, and this is not done by any arbitrary number of drops per body weight, age, etc., but by a careful study of the amount necessary to produce the desired effect. This will usually be in severer cases, 15 to 20 drops of a good tincture four times a day.

The Powdered Leaves of Digitalis.—Theoretically this should be a very active preparation, as it contains all the aque-

ous and alcohol soluble principles of digitalis. They can be given in one grain capsules, 3 to 6 capsules daily.

The Infusion of Digitalis.—The infusion of digitalis is a very active preparation containing its water soluble principles. Few preparations of the infusion are reliable, because as it is claimed, neither the American nor British Formulary give adequate directions for its preparation. When a good preparation is obtainable it has the disadvantage of not keeping well. Eight to 16 cc. should be given every 6 to 8 hours.

No matter what form of digitalis is given the dose should be reduced as soon as the pulse rate has been lowered to 80 beats a minute and the normal rhythm has been partially or completely restored. Under such conditions a good rule is to cut the dose in half and still more if there be a sudden falling off of the urinary output.

Only about 50 per cent. of so-called heart cases require digitalis and to give good digitalis to every heart case is not only useless, but positively harmful.

Tincture of Strophanthus.—Strophanthus has about the same indications as digitalis. It is greatly inferior to digitalis as a heart remedy, and rarely succeeds where digitalis fails. In circulatory failure with fibrillation it may be given in 5 to 10 drop doses three or four times a day.

Strophanthinin.—The active principle of strophanthus may be given intravenously in doses of 1/200 grain in severe cases with fibrillation. Its action is almost immediate and will support the heart until the more slowly acting digitalis can be given by mouth.

Theobromine.—Theobromine is a valuable drug in well advanced cases of cardiac failure where anasarca is present and the pulse is regular. The pure alkaloid is insoluble so the sodium acetate of theobromine is preferred. Five grains may be given in a capsule or a pill every three hours. In favorable cases it is followed by a marked increase in the urinary output, following which there is a depletion of the dropsy and marked improvement in the symptoms of cardiac failure. As soon as the urinary output is increased to a satisfactory degree, it is well to reduce the dose to 5 grains every 4 to 6 hours, and then to discontinue it entirely for five or six days. It is a marked diuretic, but if after being given for four or five days in sufficient dosage to no effect it should be

entirely discontinued as it has a tendency to produce renal irritation.

Strychnine.—Strychnine may improve the vaso motor tone and is a systemic tonic but has little or no direct action on the heart muscle. In cases of anasarca or cyanosis it is practically useless. In chronic cases it may improve the digestive functions and the appetite.

Morphine.—Morphine often is a valuable drug in exhausted patients or in marked cases of dyspnoea. It gives the patient a much needed rest, and a chance to recuperate his vital forces.

Homœopathic Medication.—Success in homœopathic medication adapts itself to the milder cases as a rule. When the remedy is carefully adapted to the symptoms, a good result can usually be expected. It would be impossible in this short space to give all the indications for all the homœopathic drugs that are often well indicated and to good result. A rough and brief outline only might be given.

Remedies for mild cases of failing cardiac energy are: Aconite, adonis, ars. iod., cactus grand., calc. phos., china, crategus oxy., ferrum, lycopus, nux vom., lycopodium and spig.

Remedies for severe cases of failing cardiac energy are: Apis, apocyanum, ars. alb., china ars., digitalis, lachesis, phos. and stdopanthus.

Remedies for senile cases are: Ars. alb., aur, mur., digitalis and lycopodium.

Finally comes the readjustment period, and in this as in every other phase of the treatment, every patient is a law unto himself. Work should be so arranged that there are definite hours for work and definite hours for rest. It is a safe rule that no person with cardiac disease should do what is usually classed as heavy work, and should avoid all sudden exertion. But from the standpoint of the cardiac patient there are great variations in capacity for work, and hence a great variation in what might be considered heavy work for a given group of cases. The result aimed at is to find work which is not heavy for each patient and to keep him well within his functional and physical capacity. By so doing he may live his three score years and ten in safety and comfort.

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EDITORIAL

HOME HOMŒOPATHY

Do we harm or benefit homœopathy by encouraging the use of the family homœopathic medicine chest? While it may, in the hands of an intelligent person do good for our cause, it may, in the hands of the unenlightened (and these are the ones we must convert) injure it. Whatever one's experience leads him to believe, it would be well for all to pause for a moment and consider the question. The mere possession of a homœopathic medicine chest implies faith in the system. But if faith can be gained it can also be lost, and it behooves us for our good and the higher motive, the good of mankind, to have our clientele keep the faith.

In nearly every household is an array of patent medicines, proprietary preparations or ready-made prescriptions which are used empirically in cases of illness. This is found the world over and can not be prevented, because man has a will of his own. We believe, and feel safe in the belief, that only too often are homœopathic medicines taken from the home chest in the same way. It may strengthen our personal cause to commend the use of such a chest and keep it stocked; but in the long run it weakens the cause of homœopathy, because only by chance is the indicated remedy selected, in the vast majority of instances. Chamomilla for baby, pulsatilla for mother and nux for father seems so simple that it belittles our art. It is simple. So simple that it is foolish and foolish because it is not homœopathy.

A very strong argument of the homœopath is that he treats the patient and not the disease. We believe that the encouragement of the home medicine chest does not strengthen this argument. Other systems of therapeutics come and go. Other physicians grasp at each new fad or fancy and indulge in empiricism because they have no law to guide them. To-day physiologic medication is on a most insecure foundation, because experimental work discovers new facts and modifies

old, and as the ground shifts, those who dwell upon it can but camp; move from place to place every so often, each time hoping the new site will be permanent.

The law of homœopathy is well grounded. While men of other schools have treated congestion with everything from cupping to the by-products of the dye industry; the same homœopathic remedies suitable to the site and degree of congestion have been handed down through several generations and are still efficient. "Remedies suitable to the site and degree of congestion," means that homœopaths have many drugs for such disorders and not one or only a few. This our patients should know. We should teach them that homœopathic drugs are not to be taken as are patent medicines; but that in each individual case the remedy must be carefully selected by some one skilled in homœopathic materia medica.

All make-shift prescribing and arguments in favor of the use of the home medicine chest were all right in the days before the telephone and automobile; but today we should demand of our patients, if we see fit that they should have a home medicine chest, that they communicate with us and allow us to select their remedy.

J. G. W.

THE PENNSYLVANIA STATE SOCIETY MEETING

WE present in this number a report of the business proceedings of the Homœopathic Medical Society of the State of Pennsylvania at its recent annual session. We feel it incumbent upon us to give an editorial review of the same, because we look upon the Pennsylvania State Medical Society as the best organization of any State Society, barring none, in the country. The attendance was not up to our standards, but this was explained as due to the very early period in the month at which the meeting was held, and the poor railroad service, which made the trip to Bedford more or less irksome. Those physicians who came by automobile enjoyed their experience. The President delivered an address which we publish as the leader in this issue of the *HAHNEMANNIAN*. In the business proceedings will be found the report of the committee thereon. Dr. Hartman's thoughts and ambitions concerning homœopathy, in our opinion, deserve serious consideration.

The report on legislation for the past winter is presented at considerable length. In Pennsylvania, medical legislation is under the care of what is called The Medical Legislative Conference, which consists of fifteen members, five each from the regular Medical State Societies, Old School, Homœopathic and Eclectic. As a means of accomplishing good work this Conference has proven itself to be an ideal arrangement enabling the educated medical men of all schools to come together and co-operate for the good of the profession and humanity. In two particulars during the past year has it done yeoman work. It has accomplished the defeat of Compulsory Health Insurance, and that, too, in such a manner that must be of the greatest assistance in fighting such bills in all other States of the Union. The literature on the subject has been considerably enlarged, and the material presented simply invaluable. The results of the battle have inured to the benefit of all physicians, whether members of Societies or otherwise. The other great victory of the Conference was the defeat of the Chiropractic Bill—accomplished by the insistence of sound education as a pre-requisite for the practice of medicine.

Dr. Wurtz's report on exhibits is the one that every society management in the country should take to heart and act in accordance therewith. Exhibitors are business men, and must be dealt with on business principles. Their wants and needs must be studied and satisfied. The exhibits must be regarded as a very important function of a Society meeting. From a financial standpoint they constitute an important source of revenue of the Society, which the exhibitors fully appreciate, and are only too glad to come in and give their aid to organized medicine. Societies not considering this of such importance as to make exhibits a feature of their meetings, do not show sufficient self-respect.

The report of the Committee on the HAHNEMANNIAN MONTHLY, the State Society Journal, was more than satisfactory, as showing a doubling of the circulation during the period the Journal has been the property of the Society.

The report from the delegates to the Congress of States was very plain talking. It called attention to the slowness with which the Federation has been traveling, in fact, showed that virtually nothing had been accomplished beyond assessing the Societies, until the Washington meeting. This report

will go far towards clarifying the atmosphere, and hasten the details of a Federation that "Federates."

Of Dr. Klopp's report as Superintendent of the Allentown State Hospital, the best remark we can make is to advise our readers to peruse it carefully. We also feel that superintendents in other of our State Hospitals, as at Westboro, Mass., Middletown, N. Y., Fergus Falls, Minn., to say nothing of others, will follow Dr. Klopp's example. No better method of propagandizing homœopathy exists than such reports. A few more of them, and we will have more State Hospitals under our care.

The speed with which business was conducted throughout the session, was the direct result of the methods employed in the management of the Society, in that all matters brought up for consideration had been studied previously, pro and con, by the trustees or special committees, so that when they came to the floor the membership of the Society was able to grasp the situation quickly, and vote intelligently. The experience gained by such a routine received further testimony in an amendment to the By-Laws by Dr. Moreland, Chairman of the Committee on Resolutions. This was to the effect that all resolutions, after introduction, should be referred promptly to the Resolution Committee, to report back to the house at an early date. To our mind this recommendation is of considerable value, because it is a very easy thing, under impulse of the electorate, or by reason of a desire to get down quickly to scientific proceedings, for members to rush a thing through, because someone wants it, and then repent of their action later. A Resolution Committee, acting on such matters, must present arguments pro and con, and be invaluable guides to the Society.

The number of papers presented was much fewer than usual; their quality, however, was fully up to the standard.

GLEANINGS

DERMATOLOGY.

Conducted by RALPH BERNSTEIN, M.D., F.A.C.P.

THE ORIGIN AND TREATMENT OF WARTS.—If warts are classified as tumors it is difficult to account for their transmissibility and their spontaneous disappearance. Warts are known to be transmitted from one location to another by scratching and even to a second person after days or months. The blood from a wart has caused the development of other warts in the same or another person. They have been transplanted by vaccination from man to man and from animal to man. They have also been transferred from person to person by objects such as towels, scissors (cutting of hair), etc. Warts have been seen to disappear spontaneously and when removed from one part of the body they sometimes disappear spontaneously in another. Both their transmission and their spontaneous disappearance speak for their microparasitic origin. From the therapeutic standpoint, artificial hyperemia has caused the disappearance of warts without leaving a scar. This also suggests a parasitic origin.—*Berl. Klin. Wchnschr.*, May, 1921.

MERCURY TREATMENT OF WARTS AND POINTED CONDYLOMAS.—Alois Ziegler treated 22 subjects with typical flat warts with Hg. iod. flav. administered in the form of pills (0.01-0.02, two or three times daily). From 10 patients the warts disappeared without a trace, in 5 cases after 30 pills, in 3 after 60, and in one after 90 pills. Through a mistake, one patient took 0.6 Hg. iod. flav. at one time, with a severe stomatitis and complete disappearance of warts as a consequence.

In some cases the mercury treatment led also to the disappearance of hard warts, and one patient after 60 pills was freed from hard warts on the hands and a great pointed condyloma in the sulcus coronarius. Another patient whose case was not followed had a breaking down of massive pointed condylomas of the vulva. But the results were less favorable, on the whole, than with ordinary flat warts.

Mercury, like arsenic, is not invariable in its effects. However, these infectious neoplasms, like lues, react specifically toward arsenic and mercury. It is remarkable that these phenomena have not been observed during antisyphilitic Hg. treatment since these patients must often have warts.—*Munch. Med. Wchnschr.*, March, 1921.

THYROID TREATMENT OF FURUNCULOSIS.—The use of thyroid extract in the treatment of boils was suggested to E. Savini by its use in a case in which boils were associated with eczema and both conditions were cured by thyroid extract. Twenty-seven cases of boils have been treated by giving small doses of 2 to 3 centigrams of desiccated thyroid every other day, without any other treatment. Among the twenty-seven cases there

were 19 men from 16 to 43 years of age, and 8 women from 19 to 32 years. In only one case was eczema associated with the boils. In all cases the pus in the boils contained *Staphylococcus aureus* in pure culture. The good effects of the treatment were evident in two or three weeks; the development of new boils was prevented; those just forming were arrested, all the inflammatory symptoms disappeared; and the evolution of the advanced lesions was hastened. Sometimes treatment was continued for four weeks, but three weeks was the average. All the patients were cured. It is necessary to interrupt the treatment, but it can be occasionally repeated (10 to 15 days a month) after the lesions heal, in order to prevent recurrence. The action of the thyroid substance in these cases Savini attributes to two factors: (1) the stimulating action of the defensive forces of the body and (2) its anti-anaphylactic action against the anaphylactic state produced by the staphylococcus infection. In at least 8 of the cases there were slight signs of hyperthyroidism, in others an arthritic tendency—both indicating a susceptibility to infection which the thyroid treatment would correct.—*Progres Med., Paris*, April, 1921.

A NEW VARIETY OF RINGWORM.—Robert Craik reports the case of a healthy girl of twenty-one with a skin eruption on her thigh. It began as a small red spot which she thought was a bite. It then became about the size of a shilling, and suggested ringworm. Fine scales showed plenty of mycelium. The source of the infection remained unknown. Treatment was soon successful. Seeded on wort agar, fine particles gave good growths. At first gray and semi-transparent, after the sixth day at room temperature a white floury center appeared and spread over most of the culture. In plante cultures, this center, under a low power, was a forest of upstanding large rough multiseptate spindles. The peripheral zone showed matted mycelium with a smooth surface on which were a few scattered small spindles and a few simple, attenuated steril aerial hyphae. Under a higher power, a slide preparation showed pyriform swelling at the septa in several hyphae. Many large spindles were seen to have 6-9 septa and thick walls conspicuously rough on the outside. Repeated culture on several media at various temperatures gave no material change except in the rate of growth.—*Lancet*, May, 1921.

PEDIATRICS.

Conducted by C. S. RAUE, M.D.

DIPHTHERIA PREVENTION WORK IN THE PUBLIC SCHOOLS OF NEW YORK CITY.—Abraham Zingher and his co-workers have obtained very successful results in the active immunization of large numbers of children with diphtheria toxin-antitoxin. The summary and conclusions reached by Dr. Zingher are as follows:

1. The Schick test and the control test have been applied during the past four months to more than 52,000 school children. Those who gave a positive or a positive combined reaction were injected with toxin-antitoxin.
2. The results of the Schick test show that the so-called "natural immunity" depends to a large extent on contact immunity developing after repeated exposures and mild infections with the diphtheria bacillus.
3. The children of the more well-to-do classes of our population show

a much higher proportion of positive Schick reactions than do the children of the poorer classes. Relative segregation of the first, crowding and close contact of the second, probably account for these results.

4. The factors of race and hereditary family tendency also seem to influence considerably the development of natural immunity to diphtheria.

5. Negative pseudoreactions were found in some schools in fully 20 to 25 per cent. of the children. These figures indicate that it is strongly advisable always to use the control test along with the Schick test in children over 5 years of age so as to identify accurately the children who show a negative pseudoreaction and thus avoid giving them the injections of toxin-antitoxin.

6. The results of the Schick retests which were made in the schools after two to five months indicate that it is better to wait at least six months before testing for the development of an active immunity after toxin-antitoxin injections.

7. Two injections of toxin-antitoxin, even of a larger amount, do not give as good results as three injections of a smaller amount. The mixture should be under-neutralized and yet perfectly safe for the human being.

8. Children under six months should not be injected with toxin-antitoxin. They are generally immune (from 85 to 90 per cent.) and do not respond to these injections, as is shown when they are Schick tested later.

9. All children from six months to five years should be injected with toxin-antitoxin. The omission of the Schick test is not of much consequence in this age group, as most of the children give a positive reaction.

10. To place the diphtheria preventive work in the public schools of a large city on a practical basis, it is advisable, for the present at least, to simplify it for the school physician by omitting the Schick test in the younger children and by immunizing all children of the incoming classes with toxin-antitoxin.

11. No child, however, should be pronounced as being immune to diphtheria until it gives a negative Schick reaction. The Schick test should not be made until at least six months have elapsed after the injection of the toxin-antitoxin.

12. School children in the grades above the incoming classes should have the Schick test and control test made before they are injected with toxin-antitoxin.—*The Journal of the American Medical Association*, Sept. 10, 1921.

OBSERVATIONS ON THE HEART IN DIPHTHERIA.—S. Calvin Smith of Philadelphia presents a very comprehensive series of studies upon the heart during diphtheria for the purpose of differentiating the simpler pulse disturbances which are of little consequence, and the serious heart abnormalities which result fatally.

The cardiac conditions which are encountered are divided into two groups, namely, initial tachycardia comprising 72 per cent. of the cases, and those cases which later on manifest the irregularities of convalescence. Initial tachycardia accompanies the appearance of the diphtheric membrane and usually subsides within forty-eight hours following the exhibition of antitoxin; there may then be expected a period of cardiac tranquility for six or eight days. Initial tachycardia is of serious import only when it

persists during convalescence, and it may then be regarded as the probable precursor of heart block.

Pulse irregularities of convalescence may be expected to arise between the sixth and eighth day of convalescence in 28 per cent. of the children affected with diphtheria.

Of these convalescent abnormalities, 65 per cent. consist of sinus arrhythmia and of a condition called sino-auricular block; 20 per cent. consist of premature contractions; none of the three are accompanied by symptoms or signs of circulatory embarrassment, nor do they eventuate in serious circulatory disturbance. The remaining 15 per cent. of convalescent irregularities consist of high grade heart block, which is strikingly sudden in onset and accompanied by urgent cardiocirculatory symptoms; death therefrom may be expected within thirty-six hours. None of the patients survived.

Sinus arrhythmia is physiologic in childhood, and whether it arises spontaneously or is experimentally induced, its presence may be taken as evidence that the heart has in all probability returned to its customary rhythm.

Sinus-auricular block, a term employed to define a pulse irregularity, is probably as physiologic as is sinus arrhythmia.

Premature contractions of auricular origin occur five times as often as ventricular premature contractions in diphtheria.

Acute heart block is without exception the only pulse abnormality which resulted fatally during the periods covered by these observations. Its occurrence may be anticipated when the patient is constitutionally inferior; when toxicity is profound or persistent during the early stages of diphtheria, and when the initial tachycardia is protracted.

Acute heart block was not once observed early in the clinical course of patients in whom early diagnosis had been followed by early antitoxin treatment in therapeutic dose.

Auricular fibrillation, as a pathologic entity, does not seem to occur in diphtheria.

Suggestions in treatment. The earlier antitoxin is used intravenously, the less likelihood there is of eventual heart muscle poisoning. The hope of preventing serious and probably fatal heart complications lies in four procedures: the exhibition of antitoxin in sufficient dose, by the intravenous route within the first twenty-four hours of diphtheritic invasion, followed by absolute rest for at least a week after the disappearance of all clinical symptoms and signs. That objection which parents or patients may have to the intravenous use of antitoxin—fear that it may cause sudden death—can be met by protecting the patient against the ever-present possibility of lethal anaphylactic shock through the simple expedient of first employing a desensitizing dose (0.5 c.c.) of antitoxin; an hour after this small subcutaneous dose the full therapeutic dose can be administered intravenously. Heart care should extend far beyond the usual quarantine period prescribed by law. It is the part of wisdom to continue heart vigilance for several weeks following diphtheria and, even though the patient has to all appearances grown strong, to insist upon a gradual return to full physical activities, meanwhile studying the heart response under varying circumstances of rest and exercise until the full normal activities of the patient are resumed.

Drugs.—Atropine is of doubtful utility in the tachycardia of diphtheria. As a usual thing the rapid heart subsides as antitoxin reduces the amount of toxins which have been driving the heart.

Digitalis is distinctly contraindicated in diphtheria. In the minor pulse irregularities, such as sinus irrhythmia, sino-auricular block and premature contractions, the drug may, by stimulating the force of the ventricular contractions, reduce slender cardiac reserve to a degree at which there is a likelihood of the heart muscle's being damaged by toxins which may yet remain in the body.

Epinephrin, despite its fleeting action, and the consequent necessity of repeated administration, will likely prove to be the stronger member of the usually inefficient group of drugs which are employed in the treatment of diphtheritic heart block.

Strychnine, by stimulating the suprarenals and causing an increase in suprarenal secretion, may have a similar beneficial effect, although the circulatory failure that is attendant on toxic heart block is likely to inhibit the response of the suprarenal glands to such stimulation.

Caffeine, in the later days of convalescence from diphtheria, often proves to be a valuable aid in improving circulatory tone.

Dr. Edwin H. Place, in discussing Dr. Smith's paper, states that one of the striking peculiarities is not only the suddenness with which heart failure appears, usually on or after the sixth day of the disease, but also the completeness with which recovery occurs when the patient does not die. Deaths almost always occur within a few days. Patients who survive heart block for a week have a good chance for recovery; and death in this type never occurs after two weeks. Recovery undoubtedly occurs in marked cases of heart block. After recovery the heart is perfectly normal; after a few months no change can be shown to have occurred in cases which have shown marked disturbance. The electrocardiograph and all other instruments fail to detect any abnormality.—*The Journal of the American Medical Association*, September 3, 1921.

ENDOCRINOLOGY.

Conducted by AUGUSTUS KORNDORFER, JR., M. D.

ON ADRENALIN.—(Bornstein, A., *Biochem. Ztschr.*, 114, 157, 1921.) The injection of adrenalin increases lung ventilation and therefore raises the respiratory quotient. The elimination of CO₂ is therefore greater. The plus respiratory quotient is only temporary and is followed in a short time by a fall to normal or subnormal. It is associated with a hyperglycemia, which is not due to the amount of carbohydrate intake.

THE PROBLEMS OF THE ADRENALS.—E. Gley, (*New York M. J.*, 114: 9, July 1921.) Gley makes the statement that for a glandular product to be an internal secretion affecting the organism it must be found in the left heart or in the general blood current. That no adrenalin is found in the blood of the vena cava above the hepatic vein or in the blood of the heart seems to be sufficient evidence to him that, physiologically, Adrenalemia does not exist. This fact apparently negates our idea of a hyper- or hypo-adrenalemia. Gley feels that a nervous mechanism and not humoral has to do with the vascular reactions of emotional origin.

ACTION OF DRUGS UPON THE OUTPUT OF EPINEPHRIN FROM THE ADRENALS: PHYSOSTIGMIN.—G. V. Stewart & J. M. Rogoff (*Journal Pharm. and Exper. Therap.*, 17: 227, April 1921.) Following the intravenous or subcutaneous injection of physostigmin the epinephrin output of the adrenals was increased as much as fifteen times the initial output. Preceding the increase there is a short period of decrease. (This seems of particular interest when considering the pharmacological tests for Vagatonia and sympatheticonia.—K.)

EVOLUTION FROM STATUS THYMICOLYMPHATICUS. THE SUCCESSIVE PHASES AND THEIR TREATMENT.—Walter Timme, (*New York M. J.*, 114: 12, July 6, 1921.) Timme, after describing the symptoms of status thymicolymphaticus, makes the statement that the hypophysis is usually small. The sella turoica is also below normal in size, the gland being almost completely enclosed by the clinoid processes. He claims that death is due to adrenal exhaustion. In way of therapy he suggests Thyroid gland 1/10 grain doses or thyroxin in doses of one-half of a milligram daily or on alternate days. The pituitary gland may be needed, in which case he administers one-quarter of a grain daily on an empty stomach. Suprarenal sometimes helps but adrenalin does not.

THE HYPOPHYSIS AND THE GENITALS.—Perits, (*Ztschr f. Urol.*, 15: 207, May, 1921.) The author calls attention to the fact that clinically the relationship between the hypophysis and the genitals is often observed. He remarks that this is especially the case in thymicolymphaticus and infantilism. He claims a mutual or reciprocal relationship exists between the hypophysis and the puberty gland. Each acts as an inhibitor of the other. Body growth is placed under the control of the pituitary gland.

THE EFFECTS OF ALCOHOL ON THE ENDOCRINES.—Charles E. deM. Sajous, (*Med. Rev.*, 100: 280, Aug. 13, 1921.) The author claims that alcohol in stimulating but non-toxic doses increases the functional activity of the endocrines. In toxic doses the opposite is true. He claims that the physical and mental depression found in the workingman justifies the use of non-intoxicating beverages such as light beers, ciders, etc., containing not more than 3% alcohol by volume or light wines containing not more than 5% by volume.

THE HYPOGENITAL HAND.—G. Maranon, (*Siglo med.*, 68: 672, Madrid, July 16th, 1921.) The author uses this term to describe a hand which is characterized by acrocyanosis. While Leopold Levi and Henri de Rothschild first called our attention to this as a symptom of endocrine dyscrinism attributing it to a hypothyroid condition and treating it by small doses of thyroid extract, Maranon believes that this vasomotor disturbance is directly associated with juvenile genital insufficiency. He believes that it is a vasomotor trouble of the vegetative nervous system due to deficiency of certain hormones which regulate the nervous function.

ENDOCRINE TROPISMS.—D. M. Kaplan, (*New York M. J.*, 114: 26, 1921.) The doses of the various glandular substances as administered by this author are interesting—Thyroid started in small doses, less than a

$\frac{1}{4}$ gr. and carefully increased; Suprarenal given by the mouth in doses varying from a sixth to one grain and repeated every $\frac{1}{2}$ hour if necessary; Ovarian extract given in doses of one grain every hour or two as needed; Mammary extract large doses are used as high as 120 grains in 24 hours; the pituitary given on an empty stomach in doses as small as $\frac{1}{4}$ grain every other day. (While the doses here given are much smaller than many men using the endocrine preparations prescribe, they are by no means as small as some men are using, especially where what they are pleased to term the dynamic effects, are sought for.—K.)

UROLOGY

Conducted by LEON T. ASHCRAFT, M.D.

INFECTION OF THE KIDNEYS FOLLOWING PROSTATECTOMY.—J. W. Marchildon (*American Journal Medical Sciences*, 1921, clxi, 243), assumes that in all cases of hypertrophy of the prostate with urinary retention there is infection of the bladder. If the prostate is removed immediately, the infection is very apt to spread to the kidney, producing a pyelonephritis. Mention is made of a group of cases in which the urine is clear and sparkling, there is no infection of the bladder and only slight retention but death occurs after a one-stage prostatectomy. In the author's opinion, infection occurs in such cases immediately after the operation, especially infection of the bladder, which results secondarily in pyelonephritis.

In the order of their occurrence the dangers following prostatectomy are toxemia, hemorrhage, uremia, and pulmonary complications.

In a study of the records of the postmortem examinations he has made, Marchildon found that pyelonephritis was a more frequent cause of death than any other condition. When uremia was the clinical cause of death the postmortem examination demonstrated the presence of infection in the kidneys. The urinary bladder was infected in practically every case and seemed to be the point of origin of the pyelonephritis. The greater number of deaths occurred when the complete prostatectomy was done in one stage. A number of case histories are reported to illustrate the different types of cases and to demonstrate when and how infection occurs.

In the author's opinion preliminary treatment by means of prolonged drainage will prevent a great many deaths following prostatectomy which are due to infection. After free drainage has been instituted and the patient has improved as much as possible, the second stage of the operation may be done.

Marchildon warns against immediate prostatectomy when the urine is found to be clear and there is little bladder retention, as in his experience the mortality is high after the one-stage operation. He advises cystoscopy in every case in which a prostatectomy is contemplated in order that complications such as stone, diverticula, etc. may be discovered and treated.

Systematic catheterization or the use of a retention urethral catheter does not give as good results as the suprapubic cystostomy. The infection is cleared up much more slowly by the former method than by the latter.

The author discusses his experience with hemorrhage following prostatectomy. He pays little attention to such hemorrhage as it has not been a cause of death in a single instance. There is little bleeding if the

patient has been prepared for operation by prolonged drainage of the bladder.

BILATERAL NEPHROLITHIASIS.—G. W. Hartman and S. A. Goldman (*California State Journal of Medicine*, 1921, xix, 59) report a statistical study of 42 cases of nephrolithiasis representing all types, and discuss 6 cases in detail.

In 10 cases the condition was bilateral. Thirty-two of the patients were males, and 10, females. The youngest was 22 and the oldest 82 years. The average age was 43 years. The duration of symptoms ranged from two days to thirty-five years. The stones were situated on the right side in 14 cases and on the left side in 16. In one of the cases of bilateral stone a horseshoe kidney was found.

A carefully taken history is the first step in the diagnosis as it gives clues from which theories may be formulated. The symptoms of renal calculus are striking and characteristic to one used to interpreting them. In the cases reviewed the chief aid in the diagnosis was the radiogram. In 29 the presence of stones was shown by the x-ray; in 4 cases they were not found by the x-ray, but were later passed. In 2 cases they were found at operation. The physical examination rarely gives positive findings, but is of value in excluding other conditions. The cystoscopic findings were negative in the majority of cases. In one case a stone was discovered to be impacted in the ureteral orifice. Functional tests showed marked improvement after the removal of stone.

Proper preparation is essential for clear radiograms. The authors obtain good results by giving $\frac{1}{2}$ oz. of castor oil on the morning and evening of the day before the examination, allowing clear fluids but no milk that day and no breakfast on the day the plate is made. Enemas are not given as they tend to produce gas. The examination must include the entire urinary tract and show the bony and soft structures, especially the psoas muscles.

The authors sum up their conclusions as follows:

1. Bilateral nephrolithiasis does not differ essentially in history or symptomatology from unilateral nephrolithiasis.
2. A carefully taken history is the first essential to the proper study of the case.
3. The symptoms of renal calculus are frequently misinterpreted; hence the necessity of correlating all findings.
4. Pain is a constant symptom and varies from a dull ache to colic; radiation of pain is the most suggestive.
5. Frequency of urination is the most common symptom.
6. The physical examination is of value chiefly to exclude other conditions.
7. The cystoscopic findings are not striking.
8. Function is usually depressed on the affected side.
9. The x-ray gives the best evidence, but is not infallible.
10. Proper preparation for the x-ray examination and a study of the entire urinary tract are essential.
11. There is no objection to a pyelogram if the shadow-casting fluid can be drained off.

12. In bilateral involvement, the better side should be operated upon first unless distressing symptoms arise from the poorer side.

13. Patients with bilateral nephrolithiasis may do well if let alone.

14. The fact that some persons are calculus-formers suggests caution in operating and a guarded prognosis.

THE BACTERIOLOGY OF CHRONIC, POST-GONORRHEAL INFLAMMATION OF THE PROSTATE AND ITS TREATMENT WITH AUTOVACCINES.—T. Messerschmidt and W. Messerschmidt (*Die Bakteriologie der chronischen postgonorrhoeischen Prostataentzündungen nebst therapeutischen Versuchen mittels Autovaccines—Deutsche Med. Wchnschr.*, 1920, xlii, 1416.) In 42 cases of chronic prostatitis the prostate secretion was examined microscopically and culturally and 19 different kinds of bacteria were found. Most of them were staphylococcus albus and aureus, pneumococcus, micrococcus catarrhalis, micrococcus tardissimus, bacillus coli, bacillus pseudo-diphtheriticum, and sarcinae. Gonococci were found in only 3 cases, although they were all cases of old gonorrhea.

Mixed autovaccines were made of the bacteria found in each case. After twenty-four hours in physiological salt solution the cultures were removed, killed at 65 degrees, and kept in 1 per cent. carbolic acid solution. In other cases the vaccines were not heated but were rubbed up with 0.5 per cent. carbolic acid.

The injections of these vaccines were well borne by the patients, and in most of the cases the pain, swelling, and secretion of the prostate disappeared within two or three weeks. In some cases there was no result except a decrease of the bacteria at first, but after further vaccine treatment recovery resulted. In the prostatic secretion diplococci resembling gonococci were frequently found.

PROSTATECTOMY CASES, POST-OPERATIVE TREATMENT.—H. A. Rosencrantz, *California State Medical Journal*, 1921, xix, 107. Rosencrantz considers postoperative hiccough as a potentially serious condition which should be checked promptly before the pernicious stage has been reached. He considers the most probable cause to be pyelonephritis which produces a reflex or a toxemia, usually without uremia. Some hiccoughs he attributes to acute irritation of the kidney and irritation of bacterial toxins rather than to that produced by the products of uremia. His plan of treatment consists of prohibiting all medicine and food by mouth, stomach washings with one-half per cent. soda bicarbonate solution two or three times daily, hot compresses, the administration of 2,000 to 3,000 c.cm. of a one-half of 1 per cent. soda bicarbonate plus 5 per cent. glucose solution during each twenty-four hours, preferably by rectum by the drip method, 5 gr. of chloretone, atropine in 1/100 gr. doses every two hours for four injections, and morphine.

Rosencrantz insists on a drastic initial purgative at the beginning of pre-operative treatment, the cathartic being given in the morning before breakfast and followed by the administration of a cup of flaxseed tea every other morning an hour before breakfast. On the morning of the day before the operation the patient should receive a dose of castor oil, and at night, an enema. On the following morning, the bowels should be flushed again.

Diarrhea can be checked only with laudanum; bismuth has no effect. The author regards this condition as a toxemic diarrhea.

Rosencrantz prefers spinal anesthesia because it lessens the danger of hemorrhage and uremia, gives the most complete relaxation, does not irritate the kidneys, and prevents ether pneumonia.

The causes of a rise in temperature are constipation, infection in the prevesical space, pyelonephritis, and a flaring up of some old focus of infection.

The author urges extreme care to remove not only the tumor completely but also the dilated prostatic urethra above the verumontanum to avoid pouching; drainage of the bladder by the urethra as well as the suprapubic wound; the removal of all focal infections before operation to prevent flare-ups; the drinking of large quantities of water; and the avoidance of the frequent application of silver nitrate or tincture of iodine to the suprapubic wound as it retards healing.

The one-stage operation is preferred by Rosencrantz in most cases, except when a bladder calculus or acute retention is present. Drainage of the prevesical space is now a routine measure. He has abandoned operating upon cases of cancer of the prostate. When the prostate is usually large and a severe hemorrhage occurs at operation, he packs the entire bladder very tightly with a large dry roll and does not insert a drainage tube. Suture of the bladder wall he regards as dangerous.

SURGERY.

Conducted by J. D. ELLIOTT, M.D.

SURGICAL ASPECT OF TUMORS OF THE BRAIN.—Porter makes a plea for earlier operative procedure in these tumors. He states that given a diagnosis of brain tumor the patient's interests are best served by an immediate operation; waiting for a complete diagnosis is dangerous. If for any reason delay in a given case is desirable, the time of the delay should not be arbitrarily limited on the authority of any one, but rather the case should be carefully watched, especially the eye grounds, and the operation done before irreparable damage has occurred. Then, too, the suffering which some of the patients endure may be, in and of itself, a sufficient warrant for a decompression operation. He personally favors the suboccipital procedure in subtentorial tumors; however, as Cushing suggests, it is questionable whether a decompression here is any more effectual than one placed elsewhere. For all other than subtentorial tumors Cushing's subtemporal operation is the one of choice, unless one desires to make some exploration in the hope of locating the tumor at the same time, in which case the operation may be planned along the lines advised by Hudson, or the combined subtemporal decompression and exploratory operation described by Cushing.

The author again renews his belief in the value of the solid needle in exploring the brain and feels that many tumors which have been overlooked could have been recognized by its use. The dangers attendant upon exploration with a hollow needle are not present and with practice slight differences in consistency are easily perceived. He advises a fine trocar and canula, such as is used for intraspinal work, dulled slightly at the point and slightly roughened for about an inch at the distal end. Coupled

with the solid needle, one has also the canula in case he wants to tap a cyst or an abscess.—*Annals of Surgery*, September, 1921.

GASTROJEJUNAL ULCERS AND JEJUNAL ULCERS.—Lewisohn reports upon twenty-one operations for gastrojejunal ulcers following gastroenterostomy in eighteen patients. One patient was operated upon twice and another three times. The lesions necessitating these operations were fifteen gastrojejunal ulcers, two recurrent gastrojejunal ulcers, one perforated gastrojejunal ulcer, two jejunal ulcers and one perforated jejunal ulcer.

Several types of operations were done, but excision of the ulcer was the choice in the majority of cases. There were two operative deaths and of twelve patients examined from one to four years after operation ten were found to be cured and the other two to be improved. The author concludes as follows:

1. The cause of gastrojejunal and jejunal ulcers is probably based on the same factors (not definitely known up to the present) which cause pyloric and duodenal ulcers.
2. Suture material is of minor importance. If present, it may be considered an accidental finding. No suture material was found in the cases above described.
3. The proper diagnosis of gastrojejunal and jejunal ulcer can be made from the history and roentgen-ray examination in the vast majority of cases.
4. Frequency of cases recorded in the last decade is based on improvement of diagnosis, not on increase in occurrence of the disease.
5. Correct data as to the frequency of this disease cannot be obtained without a perfect follow-up system. Such follow-up systems, which are in existence in some hospitals, ought to be established in every hospital.
6. Operative and final results are very good. The operative mortality was less than 10 per cent. and a cure was obtained in 83 per cent. The vast majority of patients can thus be permanently cured by a secondary operation.
7. It may be possible to reduce the number of gastrojejunal ulcers by a more direct attack of the pyloric and duodenal ulcers. Improvement of technic may show that a large number may be treated by resection rather than by gastro-enterostomy.—*Jour. A. M. A.*, August 6, 1921.

THE INCIDENCE OF CANCER IN THE SECOND BREAST.—Kilgore had the opportunity to study the material of the University of California Hospital and of the surgical pathologic laboratory of Johns Hopkins Hospital in reference to the occurrence of cancer in the second breast after radical removal of the first breast. These records contained the histories of 1,100 unselected breast cases, and the results in 659 cases were known for at least three years after operation. Thirty-seven of these patients had involvement of both breasts. In thirteen, both breasts were involved at the time of the first operation, but in the majority of these the history pointed to a primary growth in one breast with metastasis into the second. In eleven of the remaining twenty-four cases, the second cancers developed within two to thirty months, often with coincident metastases in the axilla or other organs, and these probably were metastatic growths. However, in thirteen cases the histories point to the second tumors as independent neoplasms, for in them there was usually a long interval before the second growth developed and absence of any other metastases. The author did not attempt to prove that the two tumors were independent, but called

attention to the fact that clinically the second cancers appeared to be primary new growths.

The expectancy of cancer of the second breast in women who have lived five or more years after the first operation was found to be 7 to 10 per cent. in this series. The expectancy of cancer of the breast in a normal woman, from the reports of the U. S. Census Bureau, at various ages was studied and was never over 2 per cent. The difference between these figures is so marked that the author feels they should receive careful consideration.

The mortality of cancer of the second breast corresponds closely to that of all breast cancers—from 70-80 per cent. Instead of being warned by their first experience several patients observed tumors in the second breast from two to nine months before coming for treatment.

The author's summary is: 1. The patient who has had one breast amputated for cancer is, if she survives five years, from three to four times more likely to develop cancer in the second breast than a normal woman of the same age in either of her two breasts. 2. The majority of cancers in second breasts, arising three or more years after the first operation, behave clinically at least like primary new growths—not like metastases from the cancer in the first breast. 3. These facts demand recognition, either in the form of prophylactic removal of the second breast or in redoubled care in observation of the second breast after operation on the first. 4. The records in this series suggest that if the 257 women living three years after the first operation had submitted to prophylactic resection of the second breast, twelve cancers and ten deaths from cancer in the second breast would have been prevented. 5. One patient in five has no involvement of the axilla at the time of the first operation, and if these patients had their second breasts excised, three out of four cases of late cancer in the second breast would be prevented.—*Jour. Am. Med. Asso.*, August 6, 1921.

SECTION OF THE ANTEROLATERAL TRACT OF THE CORD FOR THE RELIEF OF INTRACTABLE PAIN DUE TO SPINAL CORD LESIONS.—Leighton has performed this operation upon four patients, three for tabes and one for intractable pain following an old injury of the cord.

After a description of the operation and brief summaries of his cases he states his conclusions as follows: From my experience in four cases I believe it has been shown that the operation will produce a permanent relief in any lesion below the thoracic level. In the cases of gastric crises I believe that the section will have to be made higher than the sixth thoracic segment, and see no reason why it should not be made as high as the second or third thoracic. I would also add to the operation section of the posterior nerve roots which are present in the field, as this would destroy sensory impulses which reach to a higher level and are not touched in the section of the anterolateral columns since this section includes only pain impulses which have crossed to the spinothalamic tract below this level. The researches of Head and Pilz would seem to show that pain and temperature fibers require four to six segments for their complete crossing in the cord. If this is so, the section of the several nerve roots which are present in the field would seem to enhance the value of the operation especially in the tabetic case with pain involving the trunk. The removal

of four laminae instead of two and removal of four posterior roots would bridge the gap not included by the section of the anterolateral columns. I believe that a bilateral operation should be done in all tabetics; in inoperable tumor of the cord or such cases as reported by Beer of metastatic pelvic tumors.

The advice of Spiller that the incision of the cord might be carried forward even including the anterior horn or motor root in the thoracic region would appear to be a good one as little harm could be produced by it. The greatest danger is in cutting too far posteriorly and thereby injuring the pyramidal tract.

The operation while a delicate one is not difficult to perform, if one will familiarize himself with the subject. It should not be employed recklessly but only after due consideration and in consultation with the neurologist.—*Surg. Gynec. and Obs.*, Sept. 1921.

THE DELAY TRANSFER OF LONG PEDICLE FLAPS IN PLASTIC SURGERY.—Blair uses numerous illustrations to demonstrate some of the difficulties encountered in transplantation of pedicled flaps.

His findings are: 1. That about the neck and face of a man in ordinary health, regardless of age, rather long flaps can be made with little danger to their vitality provided the return circulation is obstructed neither by gravity nor kinking nor torsion of the pedicle, but that in women and children the circulation is not so vigorous and equally long flaps are less likely to survive. 2. That in any instance, the chance of success is increased, or a longer flap can be raised, or the flap can be cut narrower and thinner, with equal chance of success if it is first completely raised and then immediately sutured back into its original bed and the transfer to the new position delayed for a period varying from 6 days to 2 weeks. 3. That if a flap does slough in its original bed, the extent of the area lost will be considerably less than if it has been immediately transplanted. 4. That sloughing of an untransplanted flap is apt to be superficial without destruction of the full thickness of the skin, while a slough occurring after transfer is more apt to involve the full thickness of the flap. 5. That if a flap will not survive, it is a real advantage to have this fact demonstrated before removal of the scar and freshening of the edges of the defect. 6. That provision for a possible partial loss can usually be made in the original planning of the flap. 7. That in the transplanted position, gravity may be more favorable to venous and lymphatic drainage, but this will not always compensate for other deleterious factors essential to immediate transfer. 8. That if it becomes evident that the transplanted flap is in danger of sloughing, it is better immediately to place it back in its original bed. By so doing not only will time be saved but, not improbably, a much larger part of the flap. 9. That when a flap is to be split into two or more narrow flaps, such as to cover the eyelids or lips, or to line the nose, it is safer to delay splitting the flap until the time of transplantation or to an intermediate time rather than to do it at the time the flap is first raised. 10. That in a neck flap which includes a section of the clavicle for a pedicle bone graft, the soft tissues will have a firmer attachment to the bone and, I believe, the bone will be more resistant to infection if the transfer is delayed. 11. That a blood clot under a flap that has been sutured back into place may be fatal to the flap. This is avoided by moderate pressure

of dressings and use of multiple drains, to be removed in 24 hours. 12. That if there is to be a raw surface left exposed on the pedicle after transplantation of the flap, it will be more resistant to infection after a delayed transfer. 13. That certain complicated, time-consuming operations are advantageously divided into two sittings by this procedure. 14. That occasionally after suturing the flap back in its original bed, the transplantation will of necessity be long delayed by a low grade suture infection or an infection in the bed. Any of these occurrences is an incident rather than a calamity and is to be guarded against by not drawing the sutures tight, by removing them early, by free drainage and ordinary cleanliness. 15. That when any part of the flap sloughs while in its original bed, that part, no matter how superficial the slough, should not be transplanted. 16. That another disadvantage of the method, more apparent than real, is it involves two operations in place of one. My own experience has been that two properly planned operations usually bring success while the single operation has too often been followed by immediate failure necessitating a large number of subsequent steps. 17. That even delayed transfer has not been successful in every case.—*Surg. Gynec. and Obs.*, Sept., 1921.

TREATMENT OF FRACTURE OF THE FEMUR.—Speed concludes a paper in which he discusses this subject very carefully and thoroughly as follows: 1. Because there is no accepted American standard of results after fracture of the femur, there is no American standard of treatment. 2. A large percentage of the fractured femurs are cared for by the first physician that sees them; specialists are not employed to direct treatment. 3. There is not sufficient effort put forth to use abduction or suspension traction methods, as obtained by the Hodgen or Thomas splint in fractures of the shaft, which may allow knee motion during the course of bone repair without disturbing the extension. 4. Portable roentgen-ray outfits should be furnished in all hospitals treating fractures of the femur, so that results in the course of treatment can be checked as frequently as desired. 5. There have been too many operations performed on fractured femurs by inexperienced operators, and without proper indication. 6. Very little attention is given to massage and electrical stimulation of muscles during bone repair and still less is given to after-treatment, so that many patients are permitted to bear weight on soft callus. Disability results. Walking calipers are little used. The remedies suggested are: (a) Every patient with fracture of the femur should be directed to a hospital for roentgen-ray examination, correct treatment by any of the accepted methods, and after-treatment when cured. This includes fitting the patient with a walking caliper as soon as he is ambulatory or on his discharge from the hospital. (b) Because fracture tables offer good means of securing reduction and an easy method of external splinting by plaster of Paris, every hospital receiving cases of fracture of the femur should possess a fracture or orthopedic table. Careful records should be kept in accordance with a fracture record sheet, such as has been compiled by the American Surgical Association, so that a large number of average results can be grouped, that treatment looking toward the ideal may be worked out.—*Archives of Surgery*, January, 1921.

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THE VALUE OF CALCIUM SULPHIDE IN BICHLORIDE OF MERCURY POISONING: AN EXPERIMENTAL STUDY *

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(Read before the Homœopathic Medical Society of Pennsylvania, Sept. 13, 1921.)

HAYWARD and Allen, in 1913, suggested calcium sulphide as a logical antidote for mercury poisoning on the ground that 1 gm. of calcium sulphide is capable of reducing 2.31 gm. of mercury chloride. Wilms further advocated this drug as an antidote in mercurial poisoning and states that "calcium sulphide is the quickest, simplest and surest antidote for mercurial poisoning used at the present time." Other writers and text-books have since mentioned the drug in this field. For several years, it has been used with apparent success in cases of mercuric chloride poisoning entering Hahnemann Hospital and the following experiments represent a laboratory study of its antidotal value:

Rabbits were used because they are easily handled, they are susceptible and they do not vomit. As pointed out by Fantus, the stomach is never empty; this may be a disadvantage or an advantage, according to the point of view. The marginal ear vein was used for intravenous injections. When drugs were administered by the stomach, a small catheter, soft rubber, No. 14 Fr. was passed, the jaws being held open by a Whitehead mouth gag, and the drug introduced through the catheter. At first, the animals were etherized for this procedure. Later this was found entirely unnecessary, the animal

*From the Laboratory of Pathology, Hahnemann Medical College and Hospital, Philadelphia.

lying quiet and unexcited if held firmly when the catheter is first introduced. The mercury used was a Parke Davis & Co. tablet, 7 and $\frac{3}{10}$ grains with 3 and $\frac{4}{5}$ grains of citric acid. It was dissolved in water so as to give exactly 18.98 mg. to the cubic centimeter, or roughly, a 1 to 50 solution. The calcium sulphide was a Merck preparation. It was prepared, except where otherwise specified, according to the directions of Wilms, one grain to the ounce of boiling water and filtered through cotton. Fresh solutions only were used.

Experiment A.—To Ascertain the Lethal Dose of Mercury.—Meyer and Gottlieb state that 100 mg. is the minimum amount of mercury by mouth that has proved capable of causing death to human adults. This is the equivalent of 1.4 mg. per kilogram on a basis of 70 kg. of body-weight. American text-books give higher figures, 2.7 to 4.6 mg. per kilogram on the same basis. Haskell and Courtney found in dogs the lethal subcutaneous dose to be 15 mg. per kilogram of body-weight. Fantus, in rabbits, found that 40 mg. per kg. is the smallest lethal dose, within a reasonably short period, when given by the stomach. Sansum, in dogs, chose 4 mg. per kilogram, as the minimum uniformly fatal dose when given intravenously. Our experiments were simply to establish a small fatal dose for the preparation of mercury used in this study. Four healthy adult rabbits, weighing from 1267 to 2384 grams were injected subcutaneously with mercury solution in respective doses of 10, 15, 20 and 25 mg. per kilogram of body-weight. Those receiving the 15, 20 and 25 mg. doses died within five days. The 10 mg. rabbit lived ten days. We, therefore, chose 15 mg. per kg. as the appropriate dose subcutaneously. Two rabbits were poisoned by introducing into the stomach mercury solution at the respective rate of 40 and 50 mg. per kg. Both of the animals died within four days. On this account, but more especially on account of Fantus's careful work, we employed 40 mg. per kg. as the lethal dose of mercury by the stomach.

Experiment B.—To Ascertain Tolerance for Calcium Sulphide.—Wilms states calcium sulphide is non-toxic but warns of the danger of deteriorated solutions. Haskell and Courtney noted that solutions boiled for a few minutes became toxic if used intravenously. Fantus refers to calcium sulphide as a highly and rapidly toxic agent. He presumably bases this opinion on the result of an experiment in which he adminis-

tered 100 mg. per kg. by means of a stomach tube to a rabbit, the animal immediately exhibiting signs of acute poisoning and dying on the fourth day. We repeated this experiment, giving through a stomach tube 180 mg. of calcium sulphide to a rabbit weighing 1796 gm. The animal suffered no ill effects whatever. In many subsequent antidotal experiments, animals were given various doses of calcium sulphide but we did not note, with a few exceptions, acute toxic effects which we believe could be attributed to the drug.

Wilms advises that calcium sulphide be used in the strength of 1 grain to the ounce of water, giving grain for grain of the bichloride of mercury taken. This solution of calcium sulphide is very difficult to administer intravenously to a rabbit, probably on account of its hypotonicity rather than toxicity. Haskell and Courtney experienced difficulty in this respect in injecting dogs and attribute it in part to hemolysis and in part to toxicity from decomposition of the drug. In our first antidotal experiment, we started to inject intravenously 42 cc. of calcium sulphide solution (65 mg. CaS to 30 c.c. water) to counteract a lethal dose of mercury by stomach. After injecting 20 c.c. into the vein, the rabbit suddenly died. We then injected a normal unpoisoned rabbit slowly with a similar solution of calcium sulphide. After introducing 20 c.c., the animal went into convulsions, then lay flaccid and collapsic but finally recovered after an hour and remained healthy. In another animal, we injected 15 c.c. of distilled water intravenously. It became quite ill, though without convulsions, and did not appear normal for over 24 hours. In still another rabbit, 20 c.c. of normal salt solution were rapidly introduced intravenously. The animal suffered no ill effect whatever and ate immediately afterwards. This made us suspect the trouble was due to the hypotonicity and possibly to the rapidity of injection. Later work taught us that rapidity of injection was one cause of undesired reaction, and we found that by injecting *very slowly* we could introduce as much as 45 c.c. of the calcium sulphide intravenously, but even then the rabbit usually became somewhat sick and restless. In our experience, it would have been almost prohibitive to introduce a quantity as large as 50 c.c.

For reasons to be indicated later, we also injected intravenously unfiltered solutions of calcium sulphide. This may at first seem absurd because the naked eye appearance of a

preparation of calcium sulphide, 65 mg. to 30 c.c. of water (1 grain to the ounce), is that of a dense suspension and dangerous embolic effects might be anticipated. This was realized in a rabbit who received 15 c.c. of an unfiltered preparation intravenously and died in convulsions. It was believed here that the amount of water used and the rapidity of the injection aided in the fatal effect and this was proven when we found we could, by concentrating the preparation to 65 mg. to 5 c.c. of water and injecting with extreme slowness, give intravenously and successfully a full antidotal dose of this dense suspension. This showed, too, that a dense suspension may possibly be given intravenously without serious embolic effects.

Experiment C—Mercury subcutaneously; Calcium Sulphide intravenously.—Three rabbits were injected subcutaneously with mercury solution, 15 mg. per kg. Two twenty minutes later and one thirty minutes later were injected intravenously with a corresponding number of milligrams of calcium sulphide (65 mg. to 30 c.c. boiling water). All died within three days. These experiments correspond to those of Haskell and Courtney except that they used dogs instead of rabbits. They found that calcium exerted a saving influence whereas in our animals it was valueless. They, however, conclude that the value of the treatments depends chiefly or entirely on the fluid introduced as they obtained results fully as good by intravenous injection of normal salt solution. To test this we performed—

Experiment D—Lethal Dose of Mercury Subcutaneously; Normal Salt Solution Intravenously.—A Belgian hare weighing 2021 grams was injected subcutaneously with mercury, 20 mg. per kg. and immediately afterward 36 c.c. of normal salt solution was introduced intravenously. The rabbit died in 3½ days. Our result was, therefore, opposed to that of Haskell and Courtney.

Experiment E—Lethal Dose of Mercury by Stomach; Calcium Sulphide Intravenously.—Three rabbits were given respectively by the stomach 68, 73 and 69 mg. of mercury, corresponding to 40 mg. per kg. Fifteen minutes later in one and thirty minutes later in two, they were injected intravenously with a similar amount of calcium sulphide prepared according to the method of Wilms in the strength of 65 mg. to 30 c.c. of water. Two died within one day and one within two days.

These experiments seem to us important because they imitate the poisoning and antidoting as it might occur in human cases.

Experiment F—Lethal Dose of Mercury by Stomach; Calcium Sulphide in Salt Solution Intravenously.—A rabbit weighing 2326 grams was poisoned by introducing into the stomach 96 mg. of mercury. Thirty minutes later 96 mg. of calcium sulphide dissolved in boiling normal salt solution and filtered was injected intravenously. The animal died within twenty-four hours. This is similar to Experiment E, except that salt solution was used to exclude hypotonic effects.

Experiment G—Lethal Dose of Mercury by Stomach; Antidotal Dose of Calcium Sulphide by Stomach.—A lethal dose of mercury, 84 mg., was put in a dish and 84 mg. of calcium sulphide in the strength of 65 mg. to 30 c.c. of water was added to it. The mixture with its brownish-black precipitate was immediately introduced through a catheter into the stomach of a rabbit weighing 2076 grams. The animal was not sickened and remained alive and healthy. A rabbit weighing 2636 grams was given a fatal dose of mercury, 108 mg., by the stomach through a catheter. Without removing the catheter, an antidotal filtered dose of calcium sulphide, 108 mg., was immediately injected through the tube following the mercury. This animal was sickened and refused to eat for two days, but then improved and remained alive and healthy. A Belgian hare, 1786 grams, was given 72 mg. of mercury through a catheter; the tube was removed. In five minutes it was reintroduced and 72 mg. of calcium sulphide in filtered solution was injected. The rabbit died in six days. Similar experiments were carried out with intervals of fifteen, thirty and sixty minutes between the poison and the antidote. The fifteen minute rabbit died in three and a half days; the half hour rabbit died in three days and the sixty minute animal died in two days.

These experiments are significant. They indicate that the antidote is effective in the test tube; the mixture when introduced into the rabbit's stomach was harmless. When the contact takes place in the stomach as when the antidote immediately followed the poison with the catheter in the same position, it is still effective, though not quite as completely as in the first experiment. But when intervals of 5 to 60 minutes elapse between poison and antidote, neutralization does not occur because all the animals died. Presumably some antidotal

effect obtains, because the rabbit with the shortest interval lived the longest and with the longest interval the shortest period. This may be ascribed to greater opportunities for absorption with longer intervals between poison and treatment or inability of the antidote to come in direct contact with the mercury in the stomach.

Experiment H—Mercury by Stomach; Unfiltered Calcium Sulphide Intravenously.—Through a misunderstanding of the technique, some cases of mercuric chloride poisoning entering Hahnemann Hospital were injected intravenously with the unfiltered preparation of calcium sulphide, 65 mg. to 30 c.c. of hot water. Several patients presented disturbing symptoms, necessitating suspension of treatment. The great majority, however, contrary to expectations, presented no ill effects whatever and, on the other hand, apparently recovered more promptly from the mercury poisoning than those treated by routine measures alone. For this reason, we instituted the experiment cited under Experiment B (q.v.). We further attempted to antidote with the unfiltered preparation. A rabbit weighing 2136 grams was given 40 mg. per kg. of mercury through the stomach. Thirty minutes later, a preparation of calcium sulphide, 40 mg. per kg. in boiling water 7 c.c. was injected intravenously with extreme slowness and no immediate ill effects. The animal was sick for a day or two but recovered and is alive six weeks after the poisoning.

The experiment was repeated in a second rabbit but this animal died in two days. A third like experiment was attempted but we were only able to inject half the "grain for grain" dose when the rabbit presented alarming symptoms from which it quickly recovered. This dose, however, is theoretically twice the exact antidotal amount. The animal died in two days.

Experiment I—Mercury subcutaneously; unfiltered Calcium sulphide intravenously.—A lethal dose of mercury, 20 mg. per kg. was given subcutaneously and twenty minutes later calcium sulphide was given similarly to that administered to the third rabbit cited under Experiment H. The animal died in three days.

Experiment J—Mercury Subcutaneously; Unfiltered Calcium Sulphide Subcutaneously.—A lethal dose of mercury, 20 mg. per kg. was injected under the skin of the back near the spinal column. Fifteen minutes later, 20 mg. per kg. of calcium sulphide made up in the strength of 65 mg. to 5 c.c. of

boiling water was injected subcutaneously on the opposite side of the spinal column. The rabbit died in two days.

Experiment K—Mercury by Stomach; Unfiltered Antidotal Dose of Calcium Sulphide by Stomach.—A Belgian hare weighing 1976 grams was given 80 mg. of mercury by the stomach. Exactly fifteen minutes later 90 mg. of calcium sulphide in 20 c.c. of water were introduced through a catheter into its stomach. The animal died in two days.

Experiment L—Mercury by Stomach; Crude Calcium Sulphide by Stomach in Excessive Amount.—These experiments were done to imitate the method of Wilms in antidoting by mouth alone. He says, "When given by mouth, it should be administered in the tablet or crude drug form, in two to five grain doses every hour, until an excessive amount is taken. A grain for grain is four times the amount of calcium sulphide necessary to neutralize mercuric chloride in the test tube." A rabbit weighing 1831 grams was given 74 mg. of mercury by stomach. In exactly fifteen minutes, 260 mg. of crude calcium sulphide was administered through a catheter with a little cold water. An hour and two hours later the dose was repeated. For two days, the animal was quite sick and refused to eat. The third day it ate a little. On the fourth day it weighed 1511 grams. The fifth and sixth days it was apparently well and lively. A similar experiment was done on a second rabbit with a half hour interval between poison and antidote. The animal did not seem particularly sickened after the single dose of mercury and the three doses of calcium sulphide, but the next morning, in twenty hours, it died. A third rabbit was also given the same treatment. After the second dose of calcium sulphide, it appeared very ill and fell on its side. It recovered a little and a third dose was administered. In about a half hour it died, three hours after the administration of the mercury. We felt that the calcium sulphide had exerted a fatal toxic effect on this animal before the mercury had a complete chance to act.

SUMMARY AND COMMENT.—These experiments speak for themselves. We made no attempt to perform necropsies. The lesions of mercurial poisoning in animals have been well studied and reported and we had nothing to add nor was this the object of the research. There was no question about the acute toxic death in these animals and numerous normal controls spoke for the healthy stock. Of 22 rabbits in which mercury

was given as a poison and calcium sulphide as an antidote, 18 died, 17 within five days and one on the sixth day. Of the remaining four live rabbits, one was given a neutral test tube mixture of poison and antidote, another had the antidote poured immediately on top of the poison in the stomach, a third survived after an intravenous injection and a fourth after excessive doses of calcium sulphide by the stomach. Only two of the 22 rabbits could, in the practical sense, be said to have been saved by the antidote.

Of the relation of these experiments to mercuric chloride poisoning and its treatment in human beings, one may draw his own conclusions. The mere fact that calcium sulphide antidotes mercuric chloride in the test tube is, of course, no guarantee of its efficacy in mercury poisoning in man or animals. When egg albumin is mixed with mercuric chloride and given to rabbits, the majority of animals survive, as Fantus has shown, but egg albumin is of little or no use in the treatment of mercury poisoning when given after the poison has been taken. Stannous chloride is an excellent antidote when mixed with the poison but practically valueless when given immediately afterward. Carter's antidote, a combination of sodium phosphate and sodium acetate, in vitro rapidly reduces mercuric chloride to the much less toxic mercurous chloride (calomel) and it was Carter's theory that his apparent cures resulted from this reduction in the tissues. Sansum showed experimentally that this does not occur.

The interval between the taking of the poison and the beginning of treatment is of utmost practical importance as is well shown in Experiment G. Upon it depends the possibility of the absorption of a fatal dose of mercury. Once a fatal dose is absorbed, its neutralization is very doubtful. Sansum carefully studied this phase of the problem. Having sharply defined a minimum, uniformly lethal intravenous dose for dogs, corresponding approximately with the minimum fatal dose for man, he experimented with various eliminative and antidotal methods. He concludes that once a fatal dose of mercury enters the tissues at large, "death regularly occurs, and that we have no adequate grounds for believing that death is preventable by any known form of treatment. Whereas, subsequent studies may add to our knowledge, it would appear that persons who have recovered from mercuric chloride poisoning owe their lives to the fact that a lethal dose has never

gained access to the extraportal circulation. Practical therapeutic efforts should be directed frankly toward the accomplishment of two things: (1) Mechanical removal of the poison from the lumen of the alimentary tract; (2) Antidoting the poison before it leaves the portal circuit, that is, particularly before absorption." The possibility of over-enthusiasm over various specific treatments for mercury poisoning is suggested indirectly by the report of the U. S. Hygienic Laboratory of 707 collected cases of mercuric chloride poisoning, 61 of which died. This means that with any and all treatment, only 8.6 per cent. or about one out of twelve cases of bichloride of mercury poisoning is fatal.

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DISCUSSION

DR. CLARENCE BARTLETT, Philadelphia: I was led to take much interest in this matter of acute mercury poisoning by Dr. Wilms, at the Asbury Park meeting. He had made, as he told me then and as I subsequently read in his articles, rather extensive laboratory investigations concerning the antidotal action of calcium sulphide, and was exceedingly enthusiastic. His faith in the efficacy of the sulphide was so great that he was led to treat malignant syphilis by the administration of lethal doses of bichloride. His practice was at that time to give 10 grains of the bichloride of mercury at one dose, and after an interval of six hours administer calcium sulphide as an antidote. He had treated one hundred cases by this method, and none died as the result of the treatment. Since, in Washington last June, I had another talk with him, and he remarked that he had had cases in which he had given multiple treatment with lethal doses of mercuric chloride, and so far he had not lost a single case. I must say that while I have faith in Dr. Wilms' statements, I must confess that I would not like to try the treatment on myself. It is so contrary to all past experiences.

As a result of my interviews with Dr. Wilms I brought

the matter of the antidotal action of the calcium sulphide to mercuric chloride poisoning to Dr. Thomas L. Doyle's attention, with instructions to use the Wilms' treatment exclusively. At that time Dr. Wilms' technique consisted in the administration of the bichloride intravenously in sterile water, in the strength of one grain to the ounce, and grain for grain for the bichloride swallowed. No other treatment was considered, no egg albumin, no time wasted in washing out the stomach. Later, after the intravenous injection which might permit a strength as great as four grains to the ounce, the sulphide was given by the mouth, and at times by the rectum. There were nineteen cases treated at the last report, of which seventeen, I am told, recovered. The largest dose after which recovery took place was forty-nine grains. Of the two cases that died, one had taken 150 grains, and the other 250 grains, approximately. Unfortunately the internes, as internes are only too apt to do, did not make good records of the cases. In fact, from a scientific standpoint the experience to be gleaned from these nineteen cases is useless.

More recently I brought the matter of bichloride poisoning and calcium sulphide to the attention of Dr. Henry D. Jump, of the Misericordia Hospital. Within two weeks he had three cases, all of which recovered without symptoms. In fact, the recoveries were so remarkable and symptomless that he immediately made an investigation to see whether the poison had been taken. In one case, he found the corrosive marks of the mercury on the throat; in the other two the tablets were swallowed and not vomited. Thus he knows that the ingestion of the poison was complete.

You can imagine from this narrative that I have had considerable faith in this treatment; in fact, it was at my request that Dr. Sappington took up the investigation. Now comes their report which you have heard. Knowing Drs. Sappington and Hopp as well as I do, their powers of observation, their conscientious action and critical analysis, and the necessary ability to experiment, I am rather disagreeably surprised. The experience of the two observations of Drs. Sappington and Hopp on the one hand, and of Dr. Wilms on the other, are diametrically opposed. Lately Dr. Wilms has given up the administration of the calcium sulphide intravenously, and has been content with oral and rectal administration exclusively, excepting in cases where large doses have been given. It is very interesting to hear diverse reports concerning any investigations that occur in this, as in other lines of cases.

DR. J. G. WURTZ, Pittsburgh: In Philadelphia last month Dr. Sappington asked me to discuss this paper. The

work, as reported, is very interesting. Dr. Wilms was in my laboratory at Pittsburgh in July, I believe; and I complimented him on his nerve in administering to syphilitics ten grains of bichloride of mercury. I said, "Don't they vomit?" He said, "Surely they do." If it is given as a cure for syphilis and they vomit, the stomach retains an unknown amount of mercury. If the stomach retains an unknown amount, a more unknown amount is absorbed; and if this is going to be antidoted by calcium sulphide in three hours, one wonders if sufficient mercury gets into the system. Surely the amount is very uncertain.

So far as the lethal dose of bichloride is concerned, a great deal depends on the solubility of the tablet. It may be that one manufacturing company will put out one that is very soluble, and eleven more manufacturers will put out one that is not very soluble. The person who is unfortunate enough to take the soluble tablet will succumb, and the ones who are fortunate enough to get the insoluble tablets will recover. From what Dr. Hopp has read, from the statistics of the U. S. Laboratory, and from what we know of the susceptibility or immunity of various individuals to various drugs, I would say that the calcium sulphide has little effect on the bichloride of mercury poisoning.

Another thought which seems to have been the observation of clinicians, is that syphilitics are able to stand mercury a whole lot more than non-syphilitics. I do not know how true that is. It seems like folklore to me. Nevertheless, it is something that I have read. The objection may arise that you cannot compare work on rabbits with observations in human beings. Nevertheless, it is an allowable method. We can use what we find in animals to draw conclusions from regarding effects on human beings.

VITAMIN "A" CONTENT OF OILS PREPARED FROM LIVERS OF THE COD, COAL-FISH AND HADDOCK.—The best Norweigan codliver oils are derived from the fisheries off the Lofoten Islands and the Finmarken coast. The oils are in reality prepared from the livers of three varieties of the genus *gadus*, which include the cod-fish, coal-fish and haddock. Zilva and Drummond have visited the factories, observed the manufacture of the so-called cod-liver oil, and have obtained pure oils from each one of the species above mentioned. Their investigations related entirely to the determination of the vitamin-A content of each oil. As a result of this study they determined that while cod-liver oil deserves its reputation as having a high vitamin content, coal-fish oil was even more active. Haddock oil showed a high potency, but was relatively weaker than either of the others.—*The Lancet*, October 8, 1921.

PRIMARY ENDOTHELIOMA OF THE PLEURA: REPORT OF A CASE

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(From the Wallace Laboratory, Pittsburgh Homœopathic Hospital.)

(Read before the Homœopathic Medical Society of Pennsylvania, Sept. 13, 1921.)

TO DATE the etiology of tumors is unknown. Many are the accepted contributory factors; many are the accepted classifications; and many are the theories advanced; but the process of tumor growth still remains unknown. The study of neoplasms seems to have multiplied the difficulties to be overcome, in spite of the more recent advances made in embryology, histology, physiology and chemistry. Malignancy and benignity have not been satisfactorily explained and one of the chief reasons is that tumors—clinically similar—are in their histologic structure liable to present any picture of cell grouping, in any stage of growth, with any form of retrogressive change to make the determination of their true nature difficult. While the life cycles of the more simple forms of tumors, so to speak, have been well investigated and generally agreed upon, the more complex, or rather the atypic tumors stand in the way of progress. Broadly speaking, there are connective tissue tumors presenting cell structures which may resemble any of the many forms of connective tissue; epithelial tumors, less variable, but nevertheless atypic in instances; and finally tumors, the cells of which originate from or greatly resemble, certain cells the origin of which is still disputed. In this last class fall the so-called endotheliomas,—tumors composed of **cells** which are neither connective tissue nor epithelium, but closely resemble both. Great controversy exists as to whether such tumors should be classified as epithelial in nature, considered as connective tissue, or placed in a class alone.

Endotheliomas of the pleura are not common. Keilty remarks that in 5,000 reports from the University of Pennsylvania Pathological Department, nine cases of pleural endothelioma were found. According to Clarkson (cited by Keilty), out of 10,000 autopsies in the Pathological Institute of Munich, only two cases of primary endothelioma were found.

Apparently great variation exists in the clinical pictures and the gross and microscopic structure of these tumors. The

case recently reported by DuBray and Rosson presented severe and constant pain in the chest, a symptom less prominent in the case under discussion. DuBray and Rosson mention hemorrhagic pleural effusion which may be found and must be differentiated from that of tuberculosis with hemorrhagic effusion and primary malignant diseases of the lung and bronchi. Clarkson's case yielded straw colored fluid upon the first thoracentesis. In this case the exploring needle discovered no fluid of any kind. Metastases, found common and wide-spread in the cases of McDonnell and Maxwell, and DuBray and Rosson, were found common but not wide-spread by Keilty and by Clarkson not found at all. In this case they were confined to the lymphatic nodes of upper parts, as will be mentioned later. Dyspnoea, gradual cachexia, and pain seem to be the common symptoms. Other than these there is variation depending upon the extent of the growth and metastases.

Grossly these tumors usually present a nodular and fibrous appearance, more or less flattened and closely adherent to the contents of the thoracic cavity. Adami and Nicholls describe them as sometimes occurring as minute flattened nodules of miliary type or large scattered coalescing nodules of whitish color, occasionally connected by fibrous bands. Considerable thickening of the pleura is usually found and may resemble the appearance of extreme inflammatory thickening.

Microscopically are found islands of endothelial cells contained within meshes of connective tissue. These cells may grow in rows resembling acini, or they may arrange themselves in pearls, simulating epithelioma. Hyaline degeneration may be present in these pearls and rarely calcareous deposits. This tendency to glandular-like formation and the presence of pearls, lead the older writers to call such tumors "endothelial cancer."

Hektoen and Reisman consider endothelioma a subvariety of sarcoma, but separated from other sarcomas on histogenic and morphologic grounds, though they admit the close resemblance to carcinomas in view of the round, flat or cuboidal endothelial cells, which are sometimes called "epithelioid." These authors consider that the endothelium of the blood and lymph vessels is similar to that lining the serous cavities. Ewing applies the term endothelioma to tumors of the lining cells of vessels, subdural space and serous cavities and remarks that

endothelium is intermediate between epithelium and fibroblasts, in so much as endothelial cells have a dual tendency revealing at times epithelial qualities and at other times those of connective tissue. He mentions that in inflammations of serous surfaces endothelium may form giant cells and concentric endothelial pearls. He attributes to these cells a polymorphic quality by which they may be polyhedral, pavement, cylindrical, spheroid, spindle form under pressure and swollen in edematous areas. When compact these cells may form spindle-shaped masses with hyaline intercellular substance and hyaline centers may be found in the whirls which they may form.

Kettle and Ross, in an endeavor to place endotheliomas on a more secure foundation, examined vascular tumors. They are of the opinion that when of this type the tumor always reverts to the vascular type of cell. Polymorphism they accredit principally to the endothelium lining serous cavities. Hertzler sees in endothelium a tissue as distinct as epithelium and connective tissue, though he disclaims the origin of tumors from the cells lining serous cavities. This writer claims that usually the nature of a tumor is easily gained by comparing the pathological anatomy of the tumor with the normal tissue from which it springs. When the normal tissue is well characterized this is not difficult, but the nature of endothelium and the variations of endothelioma far from enhances classification. Mallory recognizes various types of endothelial cells, but considers them as a whole because they all have much in common.

MacCallum tersely reminds us that it is not difficult to determine the nature of a tumor when the elements and their relationship arouse no doubt. However, there are many tumors, the origin and histogenic relations of which are difficult if not impossible to trace. Such tumors are never familiar, but are odd growths which appear in some unusual site or in tissue where any one of several origins might be assigned to them. MacCallum considers that endotheliomas arise from the lining cells of vessels, attributing to these cells the same qualities as does Mallory. The lining of the pleura MacCallum considers as epithelial in origin, following the belief of Ribbert. Endotheliomas of the pleura, he opines, originate in the lymphatic channels underlying this membrane and do not spring from the lining cells.

The important malignant growth in the pleura is endothe-

lioma. It is found here more frequently than elsewhere. While Adami and Nicholls describe it as resembling sarcoma, especially when rapidly growing, they assign its origin to the lining cells of the pleura, from whence it may gradually extend into the lung and lymphatic glands. Adami pictures these tumors to be at times distinctly cancerous, with a relative abundance of fibrous stroma containing elongated acini lined with irregular swollen cells, large and sometimes almost cubical. However, he seems to distinguish between the histology of these tumors and those of undoubted endothelial origin springing from the vessels.

From what has been said, one can readily understand the chaos which exists regarding primary neoplasms of the pleura. It becomes necessary for one—not an authority—to ally himself with one side or the other. It seems well to adhere to the older and more popular belief that the cells lining the pleural cavity are endothelial and with that idea in mind the present case will be discussed.

P. O., 48 years of age, Polish, coal miner, married, wife and two children alive and healthy. Family history negative throughout. Was raised on a farm in Russian Poland. Had smallpox in childhood, typhoid fever at the age of eighteen, no other illnesses until the present. Denies all venereal infection. Was admitted to the Pittsburgh Homœopathic Hospital on August 9, 1920. His chief complaint: pain in the left chest, worse on coughing and knife-like in character. Was well and strong until about the middle of June, 1920, when he developed a "cold in the chest," with cough. At this time his left side felt "cold and chilly." Cough at this time produced a thick yellowish, lumpy sputum, and caused a severe sharp pain in the left side of his chest. During this attack of bronchitis (?) he felt nauseated but was unable to vomit. Since this "cold" had sharp pains from beneath the left scapula to the anterior inferior costal margin on the left side. About two weeks before admission to the hospital he noticed that his left side was somewhat swollen. Appetite poor, which was unusual for him, since the beginning of the attack and his bowels constipated. In one week he lost 19 pounds, but regained five pounds and until admission had no further loss of weight. Upon close questioning it was learned that he had had slight dyspnoea even before taken ill, but the time of onset of this is vague.

Physical examination revealed a bulging on the left side extending from the anterior axillary line to the left scapula and from the fourth to the seventh interspace. This area was sensitive to the slightest touch and pressure upon it excited a cough. Body generally well developed and fairly well nourished. Eyes, ears, nose and throat negative. Teeth poor. Heart slightly displaced to the right—about one inch. The breath sounds distant over the affected area. Whispered voice less audible. Chest otherwise negative to physical examination. No sclerosis of vessels. Abdomen relatively flattened, but otherwise normal. No marks, except from a mustard plaster anteriorly and a healed punctured wound in the sixth interspace, mid-axillary line. Left axillary glands enlarged to the size of a pigeon egg, but not especially tender. All reflexes normal, except patellar, which seemed slightly exaggerated on both sides. Urine negative. Blood 8/10/20: erythrocytes 3,900,000; leukocytes 10,600; hemaglobin 64 per cent.; polymorphonuclears 75 per cent.; small lymphocytes 18 per cent.; large lymphocytes 7 per cent. 8/11/20 sputum negative to tubercle bacilli and blastomyces. Few pneumococci and staphylococci were found. From the history and findings the tentative diagnosis of empyema was made and the patient operated 8/12/20.

Upon resecting the eighth rib no pus was found, but instead, a hard mass was discovered attached to the chest wall and apparently extending into the lung tissue. The wound was drained. A frozen section of the bean-sized piece of tumor mass removed at operation, was diagnosed cylindroma. 8/14/20 an X-ray was taken of the chest and this revealed an area of increased density involving the lower third of the chest. Within this dense area was shown an area of still greater density which appeared to extend below the rib border and diaphragm. These findings suggested that a neoplasm was present and extended from a point slightly below the diaphragm up in to the thoracic cavity. A second X-ray, 8/5/20, revealed the same findings except that the tumor at this time appeared to be entirely above the diaphragm.

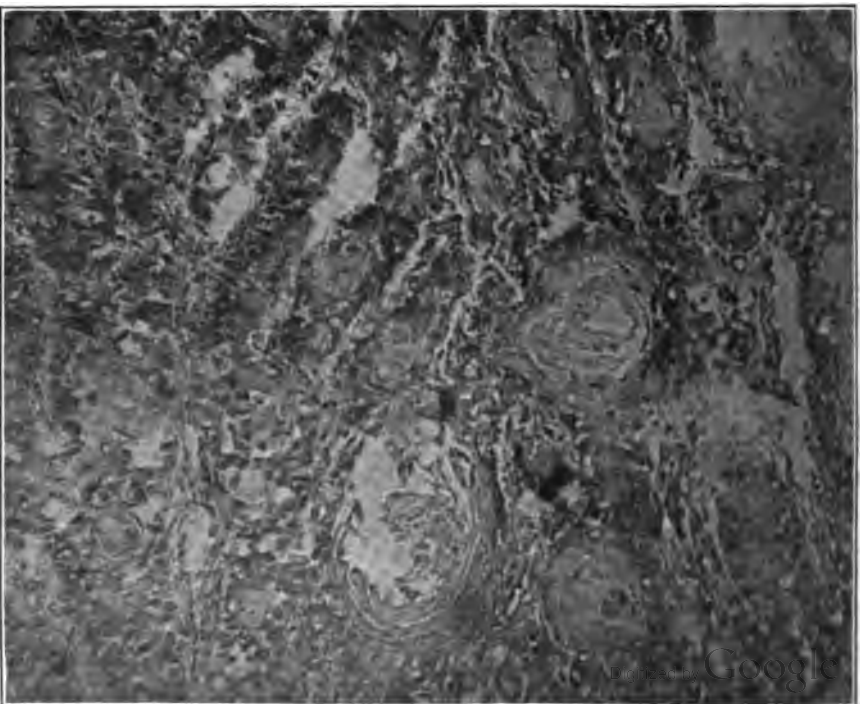
8/15/20 the Wassermann was negative. The urine remained negative throughout. Repeated examinations of the sputum were negative to tubercle bacilli and blastomyces, revealing nothing unusual for a chronic bronchitis. 8/20/20 a culture of the serous exudate from the wound revealed noth-



FIG. 1. ROENTGENOGRAM SHOWING SHADOW OF TUMOR IN LEFT SIDE OF CHEST.



**FIG. 2. SECTION OF LUNG SHOWING TUMOR AND OBSTRUCTION OF LOWER LOBE.
NOTE PERIBRONCHIAL GLANDS.**



**FIG. 3. SECTION OF GROWTH SHOWING ALVEOLAR ARRANGEMENT OF CELLS
AND PEARL FORMATION.**

ing but staphylococci and diphtheroid bacilli. Repeated cultures revealed the same.

The cough, which was slightly relieved after operation, became worse 9/16/20, and remained a bothersome symptom. Throughout the wound drained a serous fluid. On September 10, 1920, the patient complained of a pain in the right leg, which symptom, along with a slight swelling, remained for a few days, then disappeared permanently. On September 29, 1920, he complained of pain in the right arm with edema. At this time the axillary glands were enlarged, but soon reduced in size from a chestnut to the size of a bean. A gland in the left axilla remained enlarged and about September 30, 1920, the post cervicle glands on the right side enlarged to about the size of a walnut.

The temperature ranged from 98 to 101, fluctuating more after the latter part of September. Respirations normal as to rate but somewhat labored throughout, until the early part of October when they increased in rate, never excessive, and became more labored. Pulse fairly regular and remained below 80 until October 10, 1920, when they increased to 110. The patient gradually lost weight and became indifferent to diet. His temperament was such that he complained practically not at all even after his cachexia and other symptoms became more and more pronounced. While it is true that his condition slightly improved after the operation, as evidenced by his hemoglobin percentage going up to 75 on August 27, 1920, his general condition, as may be judged, continued to grow worse, and the patient died October 25, 1920.

Autopsy performed the same day revealed a body markedly emaciated. Upon the body surface was found the open wound over the seat of operation, otherwise no marks, except those before mentioned. There was present right sided cervicle adenopathy, the glands about the size of a pigeon egg. The left axillary glands were enlarged to the size of a walnut. No other glands were palpable. Rigor mortis absent. The head was not opened. The chest revealed all media stinal glands enlarged to about 3 cm. in diameter and darkly pigmented. Left pleura adherent over the entire lung surface, and on the left side was found a tumor mass extending from the nipple line posterior to the mid-axillary line and from the fifth to the twelfth rib. The mass was firmly attached to the lung and also to the chest wall, and was fibrous and nodular.

The eighth, ninth and tenth ribs were eroded through the peristomum. The left lower lobe collapsed and fibrous and obliterated except a portion on the inner border about the size of a hen's egg. The left upper lobe crepitated throughout and gave no gross pathology. The right pleura was adherent and firmly attached over the entire lung with numerous cysts containing serous fluid. These cysts varied in size, the largest being about 5 cm. in its greatest diameter. The right lung appeared emphysematous to a slight degree, but otherwise presented no gross pathology. Pericardium contained approximately 100 mls of clear straw colored fluid and other than a slight fibrous band from the apex to the lower surface presented nothing abnormal. The heart itself was flabby, but no pathology was apparent.

Abdomen showed but very little fat. The liver weighed 1400 grams and presented a slight passive congestion with fatty changes. The liver was loosely adherent to the diaphragm posteriorly. The gall bladder was negative, save a slight band of adhesions attaching it to the hepatic flexure of the colon. There was nothing to suggest any signs of malignancy in the abdomen. The spleen was loosely adherent to the abdominal wall and the capsule slightly wrinkled, but otherwise apparently normal. Both kidneys normal as to size and shape. Cortexes slightly pale with little congestion of the vessels, otherwise nothing remarkable grossly. Intestines negative throughout, except for hard fecal masses within the lumen. Stomach normal as to size, shape and position. It presented no pathology. Pancreas slightly adherent to the duodenum, but aside from this apparently normal. Bladder normal. Prostate slightly enlarged and firm.

Microscopic sections of all abdominal organs revealed no evidence of tumor metastases. The liver showed only passive congestion with fatty degeneration. The kidneys revealed only passive congestion. The spleen revealed slight congestion, otherwise nothing remarkable. Pancreas negative. Right lung showed slight emphysema but no evidence of tumor invasion. Left upper lobe revealed passive congestion to a slight degree, but numerous sections failed to show any metastases or signs of beginning tumor growth. The tumor mass presented a fibrous stroma with irregularly sized and shaped islands of cells presenting the appearance of endothelium. Some of these cells were "epithelioid" in nature and formed

numerous pearls apparently with hyaline degeneration. The stroma contained very few blood vessels and small areas of round cell infiltration. Other areas of the tumor presented the same picture except that the stroma seemed loosely arranged. Nearly every field presents large cells which may almost be considered giant cells, and also may be seen degenerative changes. These same features were found in sections from all parts of the tumor and also in the sections taken from the intercostal muscles.

The sections from the enlarged glands revealed islands of endothelial cells contained in what appears to be otherwise fairly normal lymphoid tissue. The metastases presented cells of endothelial nature fairly regular in size and shape and generally polyhedral or round. None of the glands presented the pearl formation.

From the history of this case and from the autopsy and microscopic findings one seems justified in assuming that the case was one of primary endothelioma of the pleura springing from the parietal layer and not from the underlying lymphatics. The cause of the growth is unknown, though one may venture the opinion that perhaps some long-forgotten injury may have been more or less responsible.

The glands, which enlarged and disappeared, showed nothing. The swelling on the left side was undoubtedly due to an edema resulting from local pressure, because it practically disappeared after operation. The photograph of the left lung shows the entire upper lobe (the lung being somewhat irregularly cut) portion of the lower lobe with the markedly thickened pleura and the enlarged peribronchial glands. The tumor mass is not shown because in order to remove it much mutilation was necessary, because of its firmly adherent nature. The microphotograph shows best the pearly formation.

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DISCUSSION

DR. GEORGE B. MORELAND, Pittsburgh: The rareness of this disease, as indicated by the paper which the doctor has read, would rather preclude discussion; and it would seem anyone might know, from the few other cases that he has presented, that no one could hope here to give a long list of cases of this type.

This case was an interesting one. The pathologist's report before he had had a chance to get an autopsy was one that made us feel very much the same as we had felt when we first had to perform an operation on the man. We followed up an attempt at aspiration by a resection of the rib, and finding a thickened lining of the pleura, we felt that there must be pus beneath it. Further exploration, however, failed to give us any information at all; but when the patient was removed from the operating room, we were still of the opinion that somewhere in the pleura was a cavity containing pus. I fortunately removed a small section of the lining wall of the pleura, and had the pathologist examine it. He called in several consulting pathologists, and arrived at a conclusion as to its exact nature as shown in his paper. This made me very glad that we had removed it, because it gave us an opportunity to know that the man had something in which operative interference was of no use. The history certainly suggested the presence of a pleurisy; and his temperature also indicated the presence of pus somewhere in the body. The only features that might make one think now, if he met another case of that type, that there was something different from an empyema present, was the leukocyte count, which was not very high, together with the presence of an amount of edema in the chest wall.

As I said in the beginning, the rarity of such conditions precludes any discussion of parallel cases; and the only two things that suggest themselves to me as of differential diagnostic value are this low leukocyte count and the presence of edema. Most of the edema disappeared, however, following resection of the rib.

PATHOLOGY OF SURGICAL CONDITIONS OF THE KIDNEY

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(Read before the Homœopathic Medical Society of Pennsylvania, Sept. 13, 1921.)

The kidney is so complex in structure that a brief consideration of its topography and histology might well precede the discussion of its pathological conditions.

The kidney is a compound tubular gland which, if divided parallel to its long axis by an incision from its convex surface to the hilum the cut surface will show that the parenchyma is divided into a superficial cortex and a central medulla. The slit-like hilum of the organ opens into a deep excavation, the renal sinus, which is occupied by the renal pelvis and its subdivisions, the infundibula and calyces, into which the medulla projects in the form of several conical pyramids.

The pelvis of the kidney, the expanded funnel-form beginning of the ureter, toward the renal parenchyma divides into two, sometimes three, infundibula which in turn subdivide into several calyces, each of which encloses the conical apex of a projecting medullary or renal pyramid.

The medulla consists of a number of these renal pyramids the base of each being imbedded in the adjacent renal cortex and that portion of the cortex which is interposed between the bases of the pyramids and thus brought into relation with the fibrous and adipose tissue which envelops the pelvis and calyces at the hilum, compose the cortical renal columns.

The cortex presents numerous dark lines or delicate columns which radiate from the base of the pyramids outward toward the surface of the organ. These radiating columns are the medullary rays or *pars radiata* of the cortex; they contain the straight portion of the uriniferous tubules. The portion of the cortex which invests the cortical rays and which includes all of the remaining portion of the organ, consists of extremely tortuous tubules and is characterized by the presence of small globular bodies, the renal corpuscles, each of which is made up of a tuft of capillary vessels and marks the beginning of a uriniferous tubule.

Leaving the renal corpuscles or glomeruli the uriniferous tubule pursues a tortuous course and finally enters the boundary

zone of the medulla where it forms the loop of Henle. The ascending limb of this loop recrosses the boundary zone and returns to the region of its origin where it again becomes convoluted. A short arched collecting tubule connects this convoluted portion with a straight collecting tubule of the cortical ray. The collecting tubules traverse the whole length of the ray, uniting with their fellows and receiving other arched tubules along their entire course. They then cross the boundary zone of the medulla and finally in the papillary zone, having meanwhile received numerous accessories of straight collecting tubules, they form the large terminal tubules, the papillary ducts, which pour the urinary secretion into the renal calyces. The urine must traverse through each of these successive portions before it reaches the excretory passages of the renal calyces, the pelvis and the ureter.

In studying lesions of the kidney it is important to bear in mind that it is composed of a great number of these small units, each unit consisting of an afferent vessel, a glomerulus, composed of a knot of capillaries, an efferent vessel and a tubule. Of these different elements of the unit the glomerulus, where the blood-vessels and epithelium are in close association, seems the most important, but if any one of these four essential parts of a renal unit is destroyed the others in turn atrophy.

To appreciate the pathologic changes in the kidney it is necessary to study thoroughly each separate kind of acute lesion and to trace its later development. Of the different kinds of pathologic processes affecting the kidney the toxic and infectious are the most important and are frequently combined; in fact, in the kidney more than in any other organ we get various combinations of lesions, one type complicating another and acute lesions on top of chronic and healed lesions.

General disturbances of nutrition, anemia and toxemias of all kinds tend to affect all the renal units to about the same degree. The result is a more or less uniformly distributed or diffuse lesion throughout the kidney, although sometimes certain units are much more affected than others. When, however, infectious agents are carried to the kidney and distributed according to the laws of chance, the result is a focal infection which may become the center of extensive pathologic changes. Although surgical procedures are sometimes

instituted and satisfactory results claimed for lesions of the kidney due to toxic causes as, for example, decapsulation for chronic interstitial nephritis (Edebohl) and nephrectomy for embolic infarct (Brewer), these are not truly surgical conditions of the kidney and their discussion does not come within the scope of this paper. It is the lesions due to infectious agents, mechanical obstruction, new growths, and errors in metabolism that are to be presented here for discussion.

The chief organisms responsible for kidney infections are the colon bacillus, pyogenic organisms, gonococcus and the tubercle bacillus. The first three mentioned are the causative factors in ascending infections, while the infections of tubercle bacillus are usually considered as hematogenic in origin and will be discussed separately. In ascending infections mechanical obstruction is the important predisposing factor, resulting in retention of urine in the kidney pelvis thereby favoring the growth and invasion of such organisms as may be carried from a focus in the lower genito-urinary tract. Recalling the histology of the kidney it can readily be understood how likely an infection of the pelvis may extend to any part of the kidney.

Pyelitis, Pyelonephritis, Pyonephrosis having a common origin and in all probability being extensions of the same process, will be considered together:

Etiology—

- Renal Calculus,
- Urethritis,
- Cystitis,
- Renal Affections or Tuberculosis,
- Retention of Decomposed Urine in Kidney Pelvis,
- Carcinoma,
- Acute Nephritis.

Organisms—

- B. Coli,
- Gonococcus,
- Pyogenic Organisms,
- Tubercle Bacillus.

The morbid change in simple catarrhal variety of pyelitis consists of a congested, swollen and sometimes ecchymotic mucous membrane covered with a smooth viscid exudate of mucus and desquamated epithelium. The urine in the pelvis is turbid from the admixture of pus corpuscles and epithelium. In calculus pyelitis, owing to prolonged and severe irritation,

purulent inflammation and ulceration prevail and the renal structure is involved by extension. Renal abscesses are thus formed and small dark calculi are found frequently mingled with pus in numerous small abscess cavities or perhaps, destroyed renal parenchyma may be entirely replaced by one large abscess. Persistent obstruction leading to pyelitis is associated with dilatation of the pelvis and retention of urine or pus.

Hydronephrosis.—A collection of urine in pelvis and calyces of the kidney.

Etiology.—Obstruction: Chronic or prolonged obstruction caused by occlusion of ureters, either congenital or acquired; atresia or valve-like formation or acute insertion of the ureter into the kidney. Diseases of ureteral walls as inflammatory thickening or a cicatrix from an ulcer. Flexion and twisting of ureter as from a movable kidney; pressure on ureter from without. Diseases and tumors of the bladder that involve the ureteral orifices, particularly carcinoma or that causing retention, as prostatic enlargement.

Pathology.—The cyst caused by dilatation of the pelvis of the kidney may become very large, containing as much as several gallons. External appearance of walls may be lobulated, particularly in medium sized sacs; the interior, however, shows only partial septa projecting from the walls into the cavity of the sac, as a rule. According to the site of the obstruction one or both ureters may be dilated and if, as is usual, one kidney is involved, its fellow is hypertrophied. Atrophy of the renal tissue results and is proportionate to the size of the tumor or dilatation. Accumulated liquid causes flattening and atrophy of the papillæ and gradually of the tubules and glomeruli, and in extreme cases remnants only of the renal structure remain in the wall of the hydronephrotic cyst. In the renal parenchyma there is a growth of connective tissue, a chronic nephritis with degeneration and atrophy of renal cells. The mucous membrane lining the pelvis and calyces first becomes thin, red and later thickened by the growth of connective tissue, thus forming a dense wall. This in turn, from prolonged pressure, causes the marked atrophy of the secreting structure of the kidney that is seen in such cases and also an increase in interstitial tissue with secondary contracture.

Tuberculosis of the Kidney.—Age and sex are prominent factors, most cases occurring in middle life, although they may

occur earlier or later; males are more frequently affected than females. The causative agent is the tubercle bacillus, which reaches the kidney through the blood stream, through the lymphatics, or by direct extension from adjacent structures. The calyces and apices of the pyramids are the initial location of the tubercles from whence they extend to the pelvis of the kidney, so that pyelonephritis may be the early condition. The process then affects in turn the ureters, bladder and prostate; in rare cases the process apparently originates in the bladder and extends upwards.

The tubercles, after becoming deposited in the various locations, pass through the same changes as elsewhere, caseation, necrosis and suppuration, and in the course of these changes the renal tissue is destroyed to a greater or lesser extent, entailing the formation of cheesy cysts, often impregnated with lime salts. When the bacilli reach the kidney through the blood stream, the process may be limited to the cortex and produce nodular tubercles, with cheesy masses, with but slight loss of kidney tissue. While generally conceded that tuberculosis of the kidney is almost always hematogenic in origin, a number of cases are undoubtedly due to an ascending process. For a considerable period the disease is unilateral, though in time both kidneys become involved.

Renal Calculus.—Etiology: Disturbed metabolism, uric or lithic acid diathesis, gout, excessive meat diet, and a sedentary life. Formation depends upon the gluing together of crystals and amorphous salts in the urine by colloid material. Small stone in healthy renal tissue gives rise to congestion and inflammation or may cause formation of abscess.

Tumors.—The most important new growth of the kidney is variously named adrenal carcinoma, hypernephroma and Grawitz tumor. The cells composing it are unquestionably to be regarded as epithelial in nature, but their origin is in dispute. According to the older and probably the better view they arise from displaced adrenal rests. The tumors are often rapidly growing and malignant, invading the renal tissue and blood vessels and giving rise to multiple metastases.

The greater number of tumors of the kidney are malignant. Sarcoma is much the more common form; carcinoma comes next in order. Adenoma is not uncommon and is said to degenerate frequently by epithelial overgrowth into carcinoma; sarcoma is usually met with in children and is generally of the round or spindle cell variety.

Cysts.—Various forms of cysts are found; simple serous, usually single, but sometimes multiple; hydatid cysts; dermoid cysts.

Perinephritic Abscess.—Suppurative inflammation of the connective tissue enveloping the kidney. Etiology: When not produced by trauma it is most often the result of a pyelonephritis. It is, therefore, generally secondary. It may also be due to an extension of inflammation arising in the ureter or pelvis of the kidney; pelvic, appendiceal or hepatic abscesses; spinal caries and empyema; may complicate a tubercular process or suppurating new growth as carcinoma and cysts.

The lax adipose tissue forming the fatty capsule in which the kidney reposes and the adjacent retro-peritoneal tissue are usually the seat of the suppurative process. While there may be at the start a collection of small abscesses, a single large abscess is usually formed. The abscess walls are at first soft and inclined to be shreddy; later, as in the chronic case, thick and fibrous. The pus has a tendency to burrow into the adjacent tissue, most frequently downward toward the iliac fossa, where it may be found pointing in the groin near Poupart's ligament. More rarely the pus perforates the diaphragm or finds its way into the colon, vagina or peritoneal cavity. When caused by calculus, pyonephritic calculus may be found in the abscess. Adjacent peritoneum often becomes thickened and hypertrophied in rare cases, giving rise to no symptoms during life; fibrous adhesions and a firm fatty capsule will be found surrounding the abscess at autopsy.

Diagnosis.—It has always been difficult to correlate lesions found by the pathologist with clinical observations and urine analyses. The difficulty lies in the lack of a common ground for comparison. The pathologist takes into account all the lesions in a kidney, both active and healed; the latter may give rise to no urinary changes. The clinician and chemist, on the other hand, take into account only the lesion which causes symptoms and urinary changes. The value of routine urinalysis is recognized but at times misleading; hematuria and pyuria are frequent findings in nearly all of the previously discussed lesions. The advantages of special examinations are outlined by some and disputed by others. The clinical laboratory should not be expected to give facts conclusive of a diagnosis, but with the fragments of knowledge so obtained added

to fragments obtained by clinical history are invaluable in helping to form a correct opinion of the case.

Surgical procedures on the kidney are of such significance that any laboratory process of definite value should be employed in conjunction with cystoscopic and X-ray diagnosis and careful clinical history before operating.

DISCUSSION

DR. JOHN G. WURTZ, Pittsburgh, Chairman: While the therapy of the various conditions described by Dr. Mathewson is surgical, the modes of clinical onset in the majority of instances are insidious, and the cases for the most part consult medical men, or if they go to a hospital they are admitted to the medical wards. For this reason I shall ask Dr. Bartlett to discuss the subject from the medical standpoint. I am thinking principally of pyelitis which is a far more common disease than most people believe.

DR. CLARENCE BARTLETT, Philadelphia: In response to request from the chair. There are two conditions mentioned by the author of the paper concerning which I might feel free to speak from a medical standpoint. One is the tuberculous kidney; and the other hypernephroma. The first hypernephroma that I ever observed was quite a lesson to me, as well as an intimation that as diagnosticians we do not know everything. The case was brought to me by Dr. Joseph M. Gerhart, of Cynwyd. The symptomatology of the case, together with its history, as worked out by us, was a perfect simulation of renal calculus. Such was my diagnosis, as there were present the characteristic pains and the hematuria. Physical examination gave no evidence of tumor. An X-ray was ordered and made by Dr. J. W. Frank, of Hahnemann Hospital. He reported no calculus and negative findings. Later he went to Dr. George Pfähler whose reputation in the old school as an X-rayist is world-wide. He likewise reported negatively as to calculus and kidney. Later the patient died. An enormous hypernephroma was found at autopsy.

This experience respecting the X-ray and hypernephroma has since been repeated, but the negative findings as to calculus, the characteristic grouping of symptoms, the clinical course in corresponding with what he would expect in calculus, has enabled me several times to make a tentative diagnosis during life. Later, of course, with the extensive ramifications of the growth and metastasis, the diagnosis is clear. Hypernephroma is a comparatively rare condition, and the little that

I have seen of it leads me to warn of the dangers of making a diagnosis of renal calculus. As to tuberculosis of the kidneys, my attention has been called in the literature to the enthusiasm felt by certain surgical authorities respecting the value of nephrectomies. I think they are promising altogether too much. They say excise the affected kidney, or if both kidneys are damaged then excise the worst one and the patient will get well. This promise is not in accordance with my experience. It is possible, or even probable, that the extension or existence of tuberculosis elsewhere makes these cases exceedingly unpromising, so much so that the removal of a diseased kidney alters the general outlook very little. Of course, when a tuberculous kidney is the primary or only lesion, the duty of the surgeon is plain. It is possible, then, that even with a combined tuberculosis of the bladder and kidney, removal of the kidney will cure.

An important lesson that we should learn concerning all the cases of renal infection which Dr. Matheson has so ably explained, is that the foundation of infection here as elsewhere in the body is stasis or obstruction somewhere in the urinary tract. Ureteral stricture will cause a retarded elimination or excretion of urine, which offers an opportunity for infection. The same may be said concerning stricture of the urethra. The renal infections when once started are slow of recovery, sometimes they cannot be cured, hence our main duty is to recognize these obstructions and remove them before there is an opportunity for infection. Let us get at the fundamental pathological condition, and then we shall not have the surgical kidney, or surgical kidneys will become much less common.

DR. WALTER C. BARKER, Philadelphia: I did not hear all of this paper but in discussing it Dr. Bartlett has mentioned the subject of X-ray examination of the kidneys, and cited a case of hypernephroma in which the X-ray examination failed to show the tumor. In this class of cases the pelvis of the kidney is contracted and the calices are elongated and distorted, therefore, if a pyelogram be made it is possible to make a hypernephroma.

DR. BARTLETT: This was before the days of pyelography.

DR. BARKER: With the present technic for X-ray examination of the kidneys, and especially if the Bucky diaphragm be used, it is possible by the direct examination to show the distorted outline of the kidney when hypernephroma is present, and in this way establish the diagnosis.

DR. C. I. WENDT, Pittsburgh: I have recently had two

cases bearing on this subject presenting diagnostic difficulties. Both patients were about the same age, one a man and the other a woman. The blood findings and temperature, especially in the woman, were unusual. The man's temperature ranged from 100 to 104, and his leucocyte count was 22,000; his case was one of perinephric abscess. The woman's temperature never rose above 100; in her case the white count was 43,000; the quantity of pus removed from her was truly enormous. Both patients had constant pain; the urinary examinations showed nothing normal. It is interesting that with the low white count the temperature was high, and with the high temperature case the leucocyte count was low.

PATHOLOGY OF THE PLACENTA

JOHN D. KISTLER, M.D., PITTSBURGH, PA.

(Read before the Homœopathic Medical Society of Pennsylvania, Sept. 13, 1921.)

IN discussing the pathology of the placenta it may be well to recall that the normal placenta is a flattened, roundish or discoid organ, which averages from 15 to 20 centimeters in diameter, and from 1.5 to 3 centimeters in thickness, and weighing about one-sixth as much as the child, *i. e.*, in the neighborhood of 500 grams and may exceed 1,000 grams.

In diseased conditions, on the other hand, this proportion no longer holds good, as in syphilis the placenta may weigh one-fourth, one-third or even one-half as much as the foetus. In albuminuria similar ratios obtain. The largest placentae with which we are familiar are observed in cases of general dropsy of the foetus and placenta. Cohen reports a case in which the placenta weighed 2,900 grams.

Regarding the number in single pregnancies we may have multiple. Occasionally in a single pregnancy the placenta is divided into several parts, which may be absolutely distinct, or more or less closely united. In rare instances the placenta may be oblong in shape, with an aperture of varying size somewhere in the neighborhood of its center. This abnormality is termed "placenta fenestrata." When we find a rather incomplete division into two lobes and the vessels extending from one lobe to the other before uniting to form the umbilical cord, we speak of a placenta dimidiata or bipartita. Other forms are placenta duplex; placenta triplex; and a rare case of seven

lobes, p-septuplex. All these conditions result from abnormalities in the blood supply of the decidua.

Forms of Placentae.—Placenta membranacea, placenta spuria, p-marginata, p-circumvallata, p-succenturiata, p-praevia. Of these forms only two need special mention. In p-succenturiata there may be one or more small accessory lobules developed in the membranes at some distance from the periphery of the main placenta. Ordinarily they are united to the latter by vascular connections. Its clinical importance lies in the fact that these accessory lobules may be retained in the uterus after expulsion of the foetus and give rise to serious hemorrhage.

Concerning the etiology of p. praevia little is known. Two factors, however, appear to favor its occurrence—multiparity and endometritis. It is rare in primiparae and increases in frequency with the number of children which the individual has borne. Rapidity of labor bears some relation to its frequency. Authorities have advanced different ideas regarding its mode of formation. The old idea was that the normal implanted ovum separated and in falling toward the cervix contracted new connections just before escaping from the uterus. In view of our present knowledge it appears probable that placenta praevia results either from the primary implantation of the ovum in the lower portion of the uterus, associated with an extensive cleavage of the decidua vera, by which the extension of the placenta to the region of the internal os is facilitated, or its partial development over the decidua reflexa or capsularis.

Diseases of the Placenta.—The most frequent abnormality of the placenta consists in the development of certain degenerative changes, which have been variously designated as atrophy, schirrus, placentitis, hepatization, apoplexy, phthisis, fatty and fibro-fatty degeneration of the placenta, etc., but which are most appropriately described as placental infarcts. They vary in shape, size and appearance.

To discuss each type would bore you with knowledge that is of interest only to the pathologist and not well understood by the average general practitioner. Perhaps one type that will be of interest to all of us is p-apoplexia. It is an effusion of blood behind and within the placenta tissue—a very common occurrence in early pregnancy and the most frequent cause of abortion. It increases in gravity the later it occurs in preg-

nancy, and during the latter months of gestation it may be attended with a high maternal mortality. Three types of apoplexy have been described by Jacquemin; as follows: (a) Effusion taking place into the tissue of one or more placental lobes, with formation here and there of small currant jelly clots; (b) Effusion occupying irregular cavities throughout the placental structure; (c) Effusion occupying regular and clearly defined spaces. In course of time these hemorrhagic effusions lose their color and organize into yellowish-white fibrous masses. The cause is usually due to some pathological condition of the mother affecting the maternal portion of the placental tissue. Chronic nephritis which causes increased arterial tension with congestion of the venous system, may under any undue exertion cause the weakened venous walls to yield and result in apoplexy. Traumatism may be a cause, and in rare instances the apoplexy is secondary to some foetal disease.

Edema of the placenta is not infrequent and consists of a serous effusion in and around the chorionic villi with the formation of small cysts. It is only recognized after expulsion of the organ and is found associated with syphilitic stenosis of the umbilical vein, but may accompany hydramnios, or general anascara in either foetus or mother.

Placentitis occurs in two forms, acute and chronic, the latter including the simple, syphilitic and tuberculous varieties. Acute type is very rare, usually the result of septic infection secondary to attempts at criminal abortion, or follows the escape of pus into the uterus from pus tubes. The chronic type is more frequent. Simple-chronic is the result of inflammation of the decidual cells. As it progresses the tissues become hardened and undergo fibrous changes, dense adhesions forming between the placenta and the uterine walls (adherent placenta).

The most prolific cause of death (fetal) is syphilitic placentitis. Taking on the nature of syphilis in other organs of the body it is characterized by the slow inflammation with connective tissue formation. As a whole, the organ is generally much increased in size and thickness for the period of pregnancy at which it is expelled; it is pale red and anemic in appearance, and its surface is mottled with the yellowish-white patches of diseased tissue. If the disease has had its origin in a syphilitic spermatozoid, it localizes itself, especially in the

chorionic villi; becomes immensely hypertrophied and the seat of cloudy swelling, and is highly infiltrated with granulation cells that show the peculiar syphilitic predilection for the immediate vicinity of the blood-vessels. As a result of these fibrous changes the lumen of the blood vessels becomes obliterated and the foetus perishes from asphyxiation or malnutrition. If the conception occurs in a woman already syphilitic tertiary manifestations of the disease will be present in the placenta in the form of wedge-shaped gummatous nodules. They vary in size from a millet seed to a walnut and are often the seat of fatty and calcareous changes. According to Frankel infection of a woman with the syphilitic virus after conception has occurred has generally no effect upon the placenta, which, to all appearances, is normal; this, however, is not an invariable rule.

Tumors of the Placenta.—According to Virchow, the most frequent variety of placental tumor is the myxoma fibrosum, which is composed in great part of fibrous tissue having abundant oval nuclei, with typical myxomatous areas scattered through it. Albert collected 36 examples and classified them as follows:

Myxoma fibrosum	14
Fibroma	10
Angioma	9
Sarcoma	2
Hyperplasia of chorionic villi	1

Researches have shown, however, that they are all of the same type and consist of masses of chorionic villi with immense hypertrophy and hyperplasia of the terminal vessels, so that they may be designated as chorio-angiomata. Waltz in 1906 described a number of multiple tumors in the placenta presenting a structure typical of myxosarcoma. These he considered were metastases from a similar tumor in the leg, which originated during pregnancy. If this interpretation is correct the observation represents a unique pathological condition. Williams says the only tumor he has seen was a lobulated structure; about the size of a hen's egg, which occupied the maternal surface of the organ. Histologically it was a sarcoma.

Tuberculosis of the placenta is extremely infrequent. Novak and other investigators were able as early as 1904 to demonstrate lesions in the placenta of 9 out of 20 pregnant

women dying from tuberculosis and found tubercle bacilli in 7 out of 10 placentae from women in various stages of the disease.

Calcification of the Placenta.—Small calcareous nodules are frequently observed upon the maternal surface of the placenta; and are occasionally so abundant as to cause it to resemble a piece of coarse sand-paper. When the almost universal occurrence of degenerative changes in the placenta is remembered, it is rather a surprise that calcification is not met with more frequently, especially when ideal conditions are present during the latter months of pregnancy for its development.

Hydatidiform Mole.—This as a rare affection of the chorion consisting in a proliferative degeneration of the chorionic villi, with the production of a mass of grape-like vesicles attached to the placenta and known as placental moles. These vesicles vary in size from that of a pin's head to a walnut and contain a transparent fluid closely resembling the liquor amnii. A curious feature of the affection is the tendency it shows to recur in successive pregnancies in a given individual. Mayer reports a patient suffering with the disease eleven times. Cysts may number 5,000 or more, each having a pedicle attached to another cyst, and may attain the size of a fetal head. Authorities agree that the development of the condition is dependent upon endometritic changes.

Chorioepithelioma.—This is a term applied to a very malignant variety of uterine tumor which develops after a full term labor, abortion, or hydatidiform mole; the last association being noted in nearly 50 per cent. of the cases. Sanger believed that the tumor was of connective-tissue origin, and designated it as decidual sarcoma. It has metastases to other organs of the body. Williams reports a case as follows: One week following a spontaneous full term delivery a nodule appeared upon the right labium majus, resembling a hematoma in appearance rapidly increasing in size and within two weeks became the size of a hen's egg. It soon underwent necrotic changes, accompanied by a foul-smelling discharge. Patient grew worse, developed a cough, dying six months later. The nature of the tumor was not suspected during life but at autopsy the lungs, kidneys, spleen and ovaries were studded with large numbers of metastases of varying size, resembling placenta tissue in appearance.

I trust that this paper will tend to make us more careful regarding the inspection of the placenta and may enlighten us upon some of the apparently unknown causes of our fetal deaths.

DISCUSSION

DR. WARREN C. MERCER, Philadelphia: Dr. Kistler is to be congratulated on his paper, for in it he has covered the entire subject. In any important case one is likely to find some character of malformation of the placenta; in some the lesions are microscopic, and not discoverable at the time. In many others, however, they may be seen very readily by the naked eye. A hydatid does not occur so frequently when one considers the vast number of pregnancies. I remember a case not long ago, sent into the hospital. The woman was bleeding; she did not know that she was pregnant. She had missed two or three periods, with a rapid increase in the size of the uterus, and then hemorrhage began. The mass was the size of a seven months' pregnancy. We dilated the cervix and removed a hydatid form. The patient made a most excellent recovery. Cases of this kind require to be watched, because chorio-epithelioma is apt to develop. Vilamentous implantation of the cord and succenturiate placenta are seen frequently. A number of the pathological conditions mentioned by the doctor are seldom seen. Every physician who attends a maternity case should examine the placenta and membranes when delivered, especially should he pay attention to the possibility of retention of particles of the same in the uterus. If a portion of the placenta is missing and subsequently a temperature or odor develops, he knows the cause and the proper therapy.

DR. C. I. WENDT, Pittsburgh: One of my patients was so indiscreet as to go in bathing in a stream of water last July during her menstrual period, on the second day; and the flow stopped. She did not experience any particular bad feeling then, but the next month she failed to flow and had some disturbance of the stomach. She thought that she was pregnant. She missed two periods, and then began to have severe bearing-down pain and some tenesmus of the bladder and of the bowel.

The question was as to the diagnosis. I did not know what diagnosis to make at first. Examination of the uterus did not reveal enough enlargement to be due to a three months' pregnancy, and the general condition was such that I could not feel that she was pregnant. I felt that it was not wise, some-

times, to take the patient's feelings into consideration. On examination, not long ago, on the washing away of the discharge, I noticed on the cotton a little jelly-like substance. It was not a cell of a hydatid, but it made me think of that. I gave her some gas and investigated, and scraped out what I thought to be a hydatid. Examination proved it to be chorionic.

This woman has had the same condition arising twice. Two years ago, almost an identical procedure was done by a surgeon. It was two hydatids in this one case. To my knowledge, I have not had but three in the last twenty-five years. She has not had any endometrial trouble.

SOME REASONS WHY HOMŒOPATHY IS CONSIDERED A FAILURE

G. HARLAN WELLS, M.D., PHILADELPHIA, PA.

(Read before the Homœopathic Medical Society of Pennsylvania, Sept. 13, 1921.)

IN the age-long struggle between man and disease many weird and fantastic systems of treatment have been devised. The majority of these have failed when subjected to the test of practical experience, and the student of medical history is bewildered and discouraged by the innumerable remains of useless and frequently harmful therapeutic procedures that once constituted the chief reliance of the physician of past ages. Of a truth "the spirit is willing but the flesh is weak," and the practical accomplishments of the true physician always fall far short of the ideal he so earnestly hopes to attain.

Practitioners of homœopathy, in common with all other medical men, frequently fail to cure their patients. The prescriber who boasts that he cures every patient for whom he prescribes is, fortunately, growing scarce, because such men are looked upon with suspicion by the vast majority of the profession who daily experience the stimulating effect of failure.

When we come to analyze the causes of our failures in homœopathic prescribing we find their name is legion. Broadly speaking, we can group them under two heads: (1) Failures due to the present limitation of human knowledge; (2) Failures due to a lack of skillful application of known facts and principles on the part of the individual physician.

Of the failures that are the result of the present limitations of human knowledge we have those due to the incom-

plete and erroneous state of knowledge of *materia medica*, of pathology, of physiology, of diagnosis and of many other medical sciences. Many among us are prone to stress the imperfections of the *materia medica*, both of our own and of the dominant school. It is true that we do not have a perfect knowledge of the effect of any one drug, and there are, no doubt, effective therapeutic agents in the economy of nature of whose very name we are unaware.

But are we any better off when we come to supposedly more exact sciences? For example, there are important tissues and structures in the human body of whose physiological function we have no knowledge whatever, and what we accept as proven truths in pathology to-day become the jests of to-morrow. It is, therefore, obvious to the most superficial student of the problem that no matter how true may be the principles underlying homœopathy, in the clinical application of these principles perfect results are not uniformly possible until man attains a perfect knowledge of drugs and disease.

Passing over those failures for which neither homœopathy nor the physician can be held responsible we come to group 2, which deserves our most careful consideration, namely, those due to the lack of skillful application of known facts on the part of the physician, as failures of this type may be largely avoided by study and experience. It would be manifestly impossible for me to dwell upon or even to name the many causes of failure that might be included under this heading. There are, however, two that are rarely referred to, yet are responsible for many of our failures to cure:

First: *The attempt to apply homœopathic remedies to conditions outside of their proper sphere of action.* This is the mistake that is constantly made by the over-enthusiastic homœopathist and has led to the observation that its friends have often done more to injure homœopathy than its enemies.

The law of similia, like every other natural law, is supreme in its peculiar sphere of action, but utterly impotent outside of that sphere. The proper purpose of the homœopathic remedy is *to stimulate the cells of the body to curative reactions.* All substances that are capable of doing this, whether they be plants, minerals, serums, bacteria or vaccines, follow the homœopathic law. When we try to employ a homœopathic remedy for any other purpose we fail. There is no homœopathic purgative, no homœopathic astringent, no homœopathic

hypnotic. I recognize the fact that patients suffering from constipation, diarrhoea, or insomnia, may have those symptoms removed by a homœopathic remedy, but the process of cure is fundamentally different from that employed when physiologically acting drugs are administered. There is an old Arab saying that a hatchet is a good thing but not to eat soup with. The same truth applies to homœopathy.

Second: We frequently fail to cure our patients by the homœopathic remedy because we fail to obey one of Hahnemann's most positive instructions, namely, *to remove the cause before administering the drug*. In other words, the prescriber who is a true follower of Hahnemann must first make an accurate diagnosis. He must not only give the disease a name but he must understand the functional and organic changes that accompany it, search out its causative factors, both present and antecedent. I could cite innumerable cases occurring in my own practice in which I failed to benefit the patient because I allowed the causative factors of the disease to remain undisturbed, and consequently a cure was impossible. I shall content myself with referring to the history of two cases:

CASE I.—Mr. D. Age 40. Had been in Rome for one year and at that time suffered by a recurring type of fever associated at times with chilliness, but no distinct rigors. After his return to the United States the fever disappeared at times, and would recur at intervals of several weeks. The patient gradually lost weight—about thirty pounds in six months—and became much debilitated. When he first came under my observation he had no appetite, was emaciated, had a slight cough and a temperature ranging from 97 degrees in the morning to 101 degrees in the evening. He stated that his condition was diagnosed in Rome as malaria. I put him on fifteen grains of quinine daily for ten days without improvement.

The conclusion was then reached that he was suffering from pulmonary tuberculosis. A few weeks' treatment, with this idea in view, by rest and various remedies, was productive of no good results. At this time I made a radiographic examination of the teeth, found four large apical abscesses, and had the infected teeth extracted. In three days his temperature was normal and the patient made rapid progress under homœopathic prescribing.

CASE II.—A boy who suffered from a profuse nasal discharge, with many catarrhal symptoms. He received a num-

ber of remedies without improvement, and was finally brought to Philadelphia. He was examined by a nose and throat specialist and a genuine Jersey sand burr was removed from one nostril, after which the remedies worked!

The homœopathist then must be ever alert to make an early diagnosis, and no man has a just right to attribute his failure to cure to the fallacy of homœopathy, if he has neglected this point.

A personal experience of nineteen years of clinical work has constantly strengthened my conviction of the efficacy of the homœopathic method rationally applied. It is not an easy method of prescribing. Failures are frequent both for reasons within and for reasons without our control, but the physician who, after first making a careful diagnosis for the purpose of determining whether the case is suitable for homœopathic treatment, and in order to remove all obstacles to cure, accurately prescribes the homœopathic remedy, will, I am convinced, be giving the patient the benefit of the best medical treatment so far devised by man.

DISCUSSION

G. MORRIS GOLDEN, Philadelphia: This paper has brought out a point which has been, more or less, a hobby with me. Some years ago, there was instituted at Hahnemann College, a course in Case Taking. By that I mean the student was taught how to examine his patient and shown the importance and necessity of such a procedure from a diagnostic, therapeutic and prognostic standpoint. It appears that the crux of the whole situation in reference to Dr. Wells' remarks depends upon a thorough examination followed by logical deduction of the facts, as presented. No doubt if all these factors had been followed the errors as pointed out would not have occurred.

The whole progress of medicine at the present day may be attributed to careful examination and a logical deduction of the clinical manifestations properly tabulated. The point in reference to the failure of our *materia medica* is well taken and the cases illustrate that the conditions present were those that could not be expected to be relieved by an internal remedy.

From experience I have found that the great error of the student is to obtain a heterogeneous mass of symptoms and attempt to match it up with a remedy, without making the proper examinations necessary to a diagnosis. Hence the criticism,

the homœopathic remedy is of no value. The trouble is not with the remedy, but with the observer. It would appear that a remedy selected upon a thorough examination, revealing to us the nature of the anatomical lesion, the extent to which the physiological function of the organs involved is disturbed, plus the clinical manifestations and symptomatology whether objective or subjective would form the most logical basis for a rational prescription. If this method were carried out, and such findings properly analyzed and classed, there is no doubt that we could produce a *materia medica* of great value.

DR. E. A. KRUSEN, Norristown: I have felt for a long time that some of our failures in prescribing the homœopathic remedy lay within ourselves. In failing to diagnose the cause of the trouble lies the failure to give the proper remedy. We should, as has been said here, be very careful in making a thorough examination, and then be as careful in selecting the indicated remedy. To do that requires a great deal of careful work and careful study. I have felt for some time that there was not enough time spent in the preparation of the student along medical lines. Medicine is not as attractive to the student as surgery. Students like to see an operation. Our patients like to see the effects of an operation. Surgery appeals to the gallery more than does medicine. Therefore, I am afraid we have fallen into the rut of devoting more time to surgical instruction than medical instruction. A large percentage of the instruction in medical colleges is, I believe, along surgical lines and things that pertain to surgery, while the greater percentage of the work of the average physician is along medical lines. If we could have a greater proportion of the instruction in medical colleges, especially in our homœopathic institutions, devoted to the medical side of the profession, I feel that our prescribing would be greatly improved.

A few years ago Dr. Osler, of Johns Hopkins, came almost to the point of drug nihilism. His view was imitated by others, notably Harvard University; and this was followed by our State Boards and other institutions. Therefore, we have not been doing enough work along medical lines. Let us have better work in *materia medica*, and more of it. I think that the profession would be benefited very much. The report from the hospitals in our late war will, I think, bear me out that evidently our soldiers were not given medical treatment as they were given surgical treatment. We have nothing to say except in praise of the surgery in our late war, but many of the young men suffered from the lack of good medical care. I am glad of this opportunity to express myself here, where we

have teachers in our medical colleges present, who can take up this matter—because it is worthy of serious consideration.

DR. I. L. MOYER, Columbia: While Dr. Wells was reading his paper it came to my mind that not only with me, but also with the general profession, we do not examine our patients thoroughly enough when they come to us. It is now my custom to go over the patient thoroughly, from end to end; and, if necessary, use the X-ray as well. Why didn't the other fellows look at the nose before they sent the patient to Philadelphia?

DR. G. HARLAN WELLS, Philadelphia, closing: With regard to the diagnosis of appendicitis in the case of congestion of the ovary, that case reminds me of the time when I was called up in the middle of the night to see a case of pericarditis with effusion; and the doctor asked me to bring along an aspirating set to tap the patient. The patient was in bed, had fever, and was breathing rapidly; and there was a bulging over the region of the heart. I said, "How long have you had that?" He replied, "Thirty-five years." I looked into the doctor's face; and he looked as I should, if I had heard the same reply in a similar case. The case was one of pneumonia.

Of course, the history of the case is an extremely important matter.

Dr. Krusen can readily see the difficulty that we have in the college in settling the problem of how many hours we should devote to one branch, and how many to another. Some think that we should teach more surgery, and less medicine; while others, like Dr. Krusen, take the contrary position.

COMPLEMENT FIXATION TEST IN TUBERCULOSIS.—The many reports on this subject, which cannot at present be considered as having been definitely settled, make it incumbent to place before our readers all investigations. Those of Dr. A. L. Punch, reported to the Medical Research Council of the St. Mary's Hospital, London, are as follows: "It would appear that the above results are strictly comparable to those obtained by me previously published, and that the conclusions drawn from the previous results are confirmed by the present series—namely: (1) That in the complement-fixation test we have a reliable means for the diagnosis of an active or recently active tuberculous lesion (pulmonary). It must be emphasized that it is the pulmonary form only of the disease that is death with in this paper. (2) That a negative result is as reliable an indication of the absence of such a lesion as a positive is of its presence."—*The Lancet*, September 3, 1921.

EDITORIAL

THE NURSING PROBLEM

FOR probably half a dozen years the nursing problem has been growing more and more acute, until at the present time the situation respecting nurses has become intolerable. At first the difficulty related solely to an inadequate supply. The output from the nurses' training schools should be very much larger than would appear to be necessary for the serving of the public. In no profession open to women is the duration of active work shorter. The decimation of nurses is due to a variety of factors, one of which appears to be peculiar to women having their opportunities for making acquaintances, and obtaining a broad view of humanity and the world; we refer to the large number of nurses who marry within a few years after graduation. Unfortunately for the sick, these women constitute the cream of the profession, a fact which speaks well for the common sense of male humanity. The result is that we are left with numerous others who do not seem to take a real professional pride in their work, and have developed traits of selfishness that have become absolutely unendurable. From a financial standpoint these undesirables have exhibited a greed for money that passes the conception of those whose experience with nurses dated back prior to the war, when, with scarcely an exception, the trained nurse was one of the greatest boons to suffering humanity, and a necessary aid to physicians. Indeed, to get along without them was an impossibility. Now that things have changed we find them making charges to the extent of all the traffic will bear, even to Twelve Dollars per day; refusing to work for longer than eight hours; in fact, being exacting in their demands in hospital and private home to an extent not dreamed of by any association of organized labor the country over.

In penning these strong words we are speaking not only from personal observation, but also from reports that come in to us from physicians whose views we respect. The matter has been so bad that Dr. Charles H. Mayo remarks publicly, "The nursing union has come to be the most autocratic closed shop in the country. The leaders of organized nurs-

ing have carried their methods too far, and with a too high hand, and in so doing have lost sight of the impulse of their profession, which is alleviation of the pain of the world; that nursing cannot be bound by hard and fast laws; that nurses are putting prohibitive prices on their services; that their demands for shorter hours and changes in hospital regulations cannot be met without sacrificing standards; that some nurses have reverted to strikes; that the educational standards for registration by States have gone beyond reason; that any intelligent girl can acquire all necessary knowledge required of a nurse in two years; that the remedy for all this is the training of sub-nurses, or nursing aids, who will accept smaller pay."

Nobody has objected to the \$25.00 per week stipend of the old days, nor did they object when the higher cost of living led to a necessary increase to \$35.00 per week. It is very doubtful, indeed, if physicians and patients, where there was the wherewithal to pay, would object to higher charges in cases calling for longer hours, and special skill. Unfortunately the demand for higher pay brought with it a resolve on the part of certain nurses of a certain kind, to give poorer and less service.

The value of the claim for higher pay is shown by the number of nurses who leave private work, and take up public health and industrial nursing.

We do not wish these editorial remarks to be considered as condemning a noble profession, for they are not so intended. We know that the majority of nurses are women of high character, truly unselfish, and all that a nurse should be. Unfortunately, however, the experience of the public in dealing with the offensive minority, is such that we hear only of the latter, who by reason of the prominence they thus get, taint the reputations of those whom we admire and praise. We feel that it is the duty of all to get together and put a stop to the evil at the earliest possible date.

The primary difficulty arose with the educational requirements demanded by some of the States. Theoretically a nurse should be an educated woman; we had better change this word to a refined woman, with emphasis on the woman. It matters very little, it seems to us, whether a girl can define "meticulous" and know what it means when she sees it in one of the short stories of the day. if she possesses the natural

qualifications for making a nurse, is educable at the training school, and has true womanly instincts. Furthermore, such boards have defined, as a requirement for entering training, the attainment of twenty-one years of age. Thus elapses four years between schooling and the taking up of a life work, during which period there are many opportunities for getting a distorted view of life, and life's objects. Training school committees must enforce strict discipline, based upon practical, rather than upon theoretical considerations. Physicians must insist that nurses shall be nurses. Lastly, the real nurses must get together and ostracize those who disgrace their profession, and who practice it for revenue only. A nurse cannot be a nurse unless she is fond of her work, and takes it seriously. It is true that she earns her money, two, three, four times over, or as many times over as any one pleases to place it, but the public cannot afford these figures, because, after all, ninety per cent. of the community has an income of less than \$2500.00 a year.

QUINIDINE SULPHATE FOR THE ARREST OF AURICULAR FIBRELLATION

For the past eighteen months medical literature has contained references to the use of quinidine sulphate in the arrest of auricular fibrillation. All articles reporting on the subject have been uniform in testifying to the very rapid results achieved by it. In a number of instances the heart took on perfectly regular action, and remained so. The introduction of this remedy for cardiac disturbance is rather surprising, because it is only one of the alkaloids of cinchona, and until recently regarded as without any definite action of its own. Previous to the discovery of quinidine as a heart remedy quinine had enjoyed some reputation, in that it was known in a number of instances to have produced some beneficial results, sometimes of remarkable character.

Unfortunately the mode of action of the drug has not been explained satisfactorily, though several most interesting philosophical reviews have been published. The whole subject is in absolute darkness, despite careful investigation with the electrocardiograph. Thus far clinical results, although perhaps dramatic, are really of no greater importance than interesting physiological experiments. While the fibrillation dis-

appears possibly more completely and more rapidly than in digitalis, the results to the patient do not appear to be so good, even though the cardiac rhythm may be restored to normal. All observers have agreed that quinidine should be used with the greatest care or discretion by the general practitioner; that is by any one who is not able to check his results off with the electrocardiograph or other instruments of precision. The risk of embolism following the administration of quinidine is a real one.

The therapeutic experiments so far reported are satisfactory only in so far as they relate to restoration of normal rhythm or an improvement in a bad rhythm. The general condition of the patient does not seem to be improved to any great extent, in fact, not any more than one would expect by the enforcement of the natural measures which one prescribes in cases of this kind. The literature speaks of permanent disappearance of the fibrillation. The candid investigators look upon relapses as the rule when the drug is discontinued.

One thing is very evident, namely, that quinidine sulphate has a remarkable cardiac action which should be studied according to the methods inculcated by our medical school. Such investigations should be of the broadest possible, including a study of the drug upon animals and upon human beings, using in both instances large, small and attenuated dosage. If this is done we think that there will be added to our *materia medica* a very valuable remedy. As the investigations are going at present we do not seem to be developing very much of permanent value.

THE SMALL STATE SOCIETY

It is too generally assumed that a medical society whose sphere of activities is limited either by numbers or by a geographically small area is without influence or incapable of doing work worth while, or at least of doing work that should bring the attention of the nation. We have never been in sympathy with the above belief, as we regard it as a fallacy. Delaware is one of the smallest states in the Union; its homœopathic membership is somewhat over 40. The total number of physicians of all schools within its borders is but 262. It so happens that Delaware has a prosperous State Society,

which meets at regular intervals, at which 80 per cent. probably of the profession attend, and which meetings are remarkable for their freedom of discussion and for good professional fellowship. In Delaware this is secured, not so much by reason of forceful leadership, as it is by a healthy state of mind that brings about unity. What is equally important is the fact that Delaware has within its borders a real homœopathic hospital properly manned with specialists and fully equipped. There are many cities in the country possessed of the "man power" but lacking in the *esprit de corps* necessary for such an undertaking. To mention them might be regarded as invidious. The guilty conscience of these cities is a sufficient accuser. Is it any wonder that Delaware has been called the "Diamond State"?

New Jersey should not be classed as a small state. We have within its borders about four hundred homœopathic physicians, all of them prosperous. Unfortunately, lying as it does between two very large states, New York and Pennsylvania, it has allowed itself to feel itself a pygmy, and has not done the things of which it is capable. As a matter of fact it is a state possessed of physicians of ability whose main fault is that they have slumbered. Meetings of the State Society have been small. The last meeting of this Society shows what New Jersey can do under the influence of an active, resourceful, aggressive leader; the meeting at Trenton was one to do credit to any state, however large or small. Over eighty members and visitors were listed as participants in one way or another upon the program. The result was good. Public meetings of the Sanitation Bureau were attended by capacity audiences. The entire meeting from beginning to end was a brilliant affair, entirely free from politics, devoted exclusively to the intellectual and professional advancement of the profession.

There are a number of State Societies in the United States which are regarded by their members as more or less dormant or useless. To those actively interested in their welfare let us advise that New Jersey and Delaware be taken as examples of what can be done. If small states have but few physicians, meaning a small meeting, its members must remember that they have correspondingly small distances to travel, and can readily make up by attendance and interest what is lacking in a large population from which to draw.

A DISTINCT ADVANCE TO FEDERATION

At a meeting of the Board of Trustees, held at Cincinnati on the 16th of November, a discussion of the matter of Federation of the State Societies with the Institute was very carefully and thoroughly considered. As a result of the conference the Board of Trustees decided to recommend certain very important changes to the By-Laws covering Federation as at present constituted. The most important of these was that of doing away with the one dollar *per capita* assessment on the State Societies. This proviso we always considered to be a very serious mistake. In the first place the tax on the individual State Society was onerous, amounting to anywhere from 20 to 33 per cent. of their net incomes from members. In the second place, the amount realized under the most ideal conditions would not be sufficiently large to be of any value in doing any special amount of propagandistic work. Furthermore, it stood as a barrier against Federation, as to impoverishing societies, and as to presenting a suggestion that after all the central body wanted the dollar more than anything else. Now that the assessment is recommended for repeal there is no valid reason why every society should not affiliate completely and forthwith.

An important recommendation covered membership in the Congress of States. Under this it was provided that each state should be represented in the Congress by one delegate for every hundred members who were also members of the American Institute of Homœopathy. This also is a distinct advance in promoting Federation. Under the old ruling one delegate was allowed for every 200 members, membership in the Institute not being obligatory. We are not clear in our own minds as to whether there is a limitation in the number of delegates.

The progress of Federation has been very slow. It has covered many years; part of this could have been prevented; much of it is the result of lack of twentieth century business methods in the framing of by-laws. Virtually all societies meeting annually adhere to the old practice of requiring that changes in the by-laws can only be made by a vote of two-thirds of those present, after an announcement of such change at a previous annual meeting. The natural result of this proviso, originally designed to prevent radicalism, is that important and even necessary changes in by-laws require in some

cases as much as two years to bring into effect; conversely, by-laws that have out-lived their utility and become harmful, cannot be abrogated until a like period. The difficulty is supposed to be overcome by arranging for a suspension of the rules at any annual meeting, after which the change is put into effect at once. While this is a way over the difficulty, it is not a fair way of dealing with absentee members. By-laws must be modernized, and it would seem to us that by-laws of the Institute and of State Societies alike, should be so amended as to provide for changes after thirty, sixty or ninety days' notice by mail, to all of its members. Then it will not be necessary to adopt some parliamentary "trick" to get over what is printed in our by-laws.

PRESENCE OF THE TUBERCLE BACILLUS IN THE DUODENAL FLUID.—Carnot and Libert (*Bull. et Mem. Soc. Med. des Hop. de Paris*, July 21st, 1921), having ascertained by the use of the duodenal tube that the tubercle bacillus is present in the duodenum in advanced stages of tuberculosis, investigated the diagnostic value of the method in cases in which the bacteriological proof of the disease was not otherwise forthcoming. For this purpose 7 cases were examined, consisting of 4 cases of tuberculous peritonitis of the ulcerative or fibro-caseous form without intestinal disturbance, 1 case of Poncet's rheumatism, 1 case of encysted pneumothorax with emphysema and disseminated bronchitis without bacilli in the sputum, and 1 case of cervical and mediastinal adenitis, with fever resembling that of miliary tuberculosis. The result was positive in three cases—namely, the case last mentioned and two cases of tuberculous peritonitis. In none of these three cases was there any sputum. In another group, consisting of eleven patients in whom tuberculosis was probably not present, the results were constantly negative. The cases thus show that the tubercle bacillus may be eliminated by the bile and pancreatic juice even in cases where there are no bacilli in the sputum.—*British Medical Journal*, Oct. 8, 1921.

ARGYRIA FROM ARGYROL APPLICATIONS.—Goldtein sends the following memorandum to the *Journal of the American Medical Association*, November 5, 1921. "Last summer Mr. T. R. consulted me as to his general physical condition. He appeared cyanotic, his face, lips and hands being of a peculiar slate-blue color. A faint systolic murmur was heard at the apex of the heart after exercise; otherwise the general physical examination was entirely negative. His previous history revealed nothing especially relating to such a condition except the fact that nine years before this consultation he had had a sore throat, and was advised by his physician to use argyrol locally. He had continued the use of this preparation twice daily for a year. He then noticed that he was turning blue and discontinued its use. He has, however, retained this appearance."

GLEANINGS

MEDICINE.

Conducted by CLARENCE BARTLETT, M.D.

TREATMENT OF ACUTE RHEUMATISM WITH COLLOIDAL SULPHUR—Viola (*Il Policlinico. Sez. Prat.*, Sept. 12, 1921) records nine cases of acute articular rheumatism in soldiers treated by intravenous injection of colloidal sulphur. As a general rule he did not give more than three injections, each consisting of 1 c.cm., either daily or every other day. The rationale of the treatment consists in its causing a polymorphonuclear leucocytosis, which is the best method of defence of the organism against bacterial invasion, and in supplementing the deficiency of sulphur in the affected joints (Maillard and Bourges). The results obtained when the injections are given early are as follows: (1) Disappearance of pain, fever and swelling within a few hours; (2) Considerable shortening of the duration of the disease; (3) Prevention of visceral complications. On the other hand, in advanced and complicated cases the injections are of little avail. The general reactions following the injections are negligible. This view does not agree with that of some writers, especially A. Robin, who attributes the value of colloidal preparations to the reaction which they cause, but agrees with the opinion of Maillard as to the reestablishment of the sulphur deficit.—*The British Medical Journal*, Oct. 29, 1921.

THE DIAGNOSIS OF "SINO-AURICULAR BLOCK."—It is growing on the profession that the differentiation of the different types of cardiac irregularity has important bearing on prognosis and treatment. For the most part these irregularities have in the past been differentiated by graphic methods, with instruments not available to the profession generally. The continued study of the subject, however, has established the fact that each irregularity has its special syndromes, so that ere long the profession will be able to diagnose the majority of cases of any individual type by clinical methods, just as they now recognize auricular fibrillation.

The above remarks are prompted by the following conclusions formulated by Calvin Smith, concerning "sino-auricular block":

1. "Sino-auricular block" is not as rare as the paucity of literature on the subject would lead one to believe. It was clinically suspected, with some degree of certainty, in scores of healthy young men in military examinations; it has been cardio-graphically proved to be present fourteen times in the last ten months of the writer's experience.

2. "Sino-auricular block" can be clinically suspected in a person whose pulse is irregular as the rate returns to normal after exercise and who is free from symptoms and signs of circulatory fault. The condition is to be differentiated from sinus arrhythmia and from premature contractions; in sinus arrhythmia the rate increases on inspiration and de-

creases on expiration, the irregularity disappearing when the breath is held. Respiration has no effect on the irregularity called "sino-auricular block." Premature contractions may be associated with other evidence of cardio-circulatory fault; they disappear on exercise and do not usually recur for several minutes following increased physical effort; they are especially noticeable when the patient is at physical rest or falling asleep. A person whose heart exhibits premature contractions (particularly if they be of ventricular origin) is usually conscious of the irregularity; the intermittency of "sino-auricular block" produces no such subjective symptoms.

3. "Sino-auricular block" is not associated with nor is it the sequel of any one definite type of infective process.

4. It is not necessarily dependent upon nor secondary to an infective process, as it occurs in individuals who are well.

5. In a rapid heart it was recorded within twenty minutes following the hypodermic administration of strychnin and atropin.

6. It has been observed in persons who had no other clinical evidence or physical signs of cardiocirculatory disturbance.

7. "Sino-auricular block," in certain persons, can be made to appear following physical exertion, mental excitement or emotional strain; it may also follow the administration of drugs; it is therefore likely due to a change in nerve control of the heart.

8. In seven of the eight patients whose electrocardiographic records are here shown there was no other evidence of cardiac disturbance in the graphic records (the exception being Exhibit H-2, which shows inversion of lead III.)

9. The premises above enumerated lead to the deduction that "sino-auricular block" is not a pathological condition, but is, in all likelihood, a physiological manifestation in certain hearts. As such its detection does not require drug interference nor does it furnish an indication for modifying the individual's accustomed manner of living."—*American Journal of the Medical Sciences*, October, 1921.

SPIROCHETICIDAL PROPERTIES OF BLOOD SERUM IN LATENT SYPHILIS.—

The blood serum from persons having latent syphilis Ebersson found has spirocheticidal properties. Rabbits were protected uniformly against infection with virulent *Spirochaeta pallida* in combination with such serums. Protective properties were found in the serums of asymptomatic persons with latent syphilis with the following histories: Infection with syphilis dating back from three to twenty-five years; patients who had received treatment until the Wassermann reaction had become negative; a number of patients who had no history of infection, who had taken no treatment, and who had a slight positive Wassermann reaction usually in the cholesterin antigen; a group of patients in whom the Wassermann reaction was slightly positive in the cholesterin and noncholesterin antigens, or strongly positive in either one, in inverse relationship; an infant whose mother's serum was found to contain spirocheticidal properties. Spirocheticidal activity of serums in latent syphilis is of such a character as to prevent the normal dissemination of *Spirochaeta pallida* from a primary focus. Failure to inoculate rabbits with mixtures of serums and spirochetes was correlated with negative inoculations with the blood from such animals. In the experimental animal, spirochetolytic serum may be de-

veloped in the course of from six months to one year after the infection. In the rabbit, as in man, protective substances are found at a time when the infection has attained a relatively latent state. The presence of these substances in given serums apparently depends on the stage of infection.—*Journal of the American Medical Association*, October 15, 1921.

SYPHILIS AND DIABETES MELLITUS.—Some very radical statements have been made concerning syphilis as a cause of diabetes. Our own experience has been that positive Wassermann has been found so seldom as to amount to nothing more than the natural coincidence. Of course, when the definite syphilitic lesion produces a glycosuria we have an entirely different proposition. Rosenbloom (*The American Journal of Syphilis*, October, 1921), publishes a study of 139 cases of diabetes, with seventeen positive Wassermann's, which apparently confirms our individual experience.—C. B.

EPITROCHLEAR ADENOPATHY IN SYPHILIS.—Rulison's study of 116 cases leads him to the following conclusions: 1. Epitrochlear adenopathy is an early, persistent, and common sign of syphilitic infection. 2. It is not pathognomonic, for the condition occurs in non-syphilitic individuals. 3. It is a valuable aid in diagnosis during a period of the primary stage when both the dark-field examination and the Wassermann test are often negative. 4. It is valuable in treated and latent cases, and when present calls for repeated laboratory tests before the possibility of syphilis can be excluded. 5. Since the condition is unilateral in one-fifth of the cases of syphilis, the statement that unilateral adenopathy is non-specific is not warranted, and cases presenting this condition should be investigated with the same care as when bilateral adenopathy exists. 6. Treatment does not cause complete resolution of specific epitrochlear adenopathy. 7. Epitrochlear adenopathy is less common in neurosyphilis than in other forms of the disease.—*The American Journal of Syphilis*, October, 1921.

THE DIFFERENTIAL DIAGNOSIS OF CHANCER AND CARCINOMA OF THE CERVIX.—Warthin's very carefully conducted studies show that the diagnosis of chancre of the cervix can be made only on the basis of a histologic examination of tissue excised from the lesion. The histologic picture is pathognostic. The demonstration of *Spirochete pallida* in the characteristic tissue-lesion is a confirmatory procedure.—*The American Journal of Syphilis*, October, 1921.

SYPHILIS IN THE THIRD GENERATION.—I. Harrison Tumpeer presents a small series of cases of great practical interest, as showing the possibility of syphilis affecting the third generation in a most unmistakable manner. He has demonstrated in his clinical study the following facts: 1. Four children from a healthy father and a mother with inherited syphilis have been affected by secondary inheritance. 2. The father, who has lived with the mother for eleven years, has escaped infection. 3. The first child by a previous father has also inherited syphilis from the mother with inherited syphilis. 4. Trauma is important in the development of active lesions in hereditary syphilis.—*The American Journal of Syphilis*, October 1921.

THE VALUE OF COD-LIVER OIL IN RACHITIS AS DEMONSTRATED BY THE X-RAY.—Park and Howland have studied the action of cod-liver oil in rachitic children, checking off their results by the X-Ray. They conclude their article as follows: "In our studies which have comprised in all some 50 cases, the results have been uniformly consistent. We feel justified in saying very definitely that cod-liver oil brings about a change in the bones, which, if the diet be not too faulty, amounts to complete cure. The change is not noticeable at once, but is usually demonstrable in almost all cases by the end of a month. In two or three months so much infiltration with salts has taken place that the extremities of the bones, except for deformities, are practically normal, and only differences in the finer architecture of the ends of the bones indicate the previous existence of a rachitic process. We look upon cod-liver oil as a specific for rickets. We have not seen it fail in any single instance and we have known it to cure the rickets even though the children were dying of some other disease. Thus, one child with a sarcoma lost the radiographic evidences of rickets, though succumbing to the malignant growth, and another child, who was hanging between life and death as the result of a severe thoracic involvement and who finally died of pneumonia one month after treatment with cod-liver oil, did not fail to show calcium deposition in the bones both by radiograms and by microscopical examination. We know of hardly another drug that in disease exerts so regular, certain and specific an effect as does cod-liver oil in rickets."—*Johns Hopkins Hospital Bulletin*, November, 1921.

THE EFFECT OF TREATMENT FOR SYPHILIS ON SEVERE ANEMIAS.—Foucar and Stokes, studying the experience of the Mayo clinic, report the conclusions which are herewith presented. These are of more than ordinary importance, because they are contrary to the accepted views of the profession, and the evidence presented appears to be well founded. Attention to the propositions of the authors unquestionably will relegate to the advantage of the reader. 1. Severe anemia, either primary or secondary, associated with late or latent syphilis, is apparently rare, twenty-five cases appearing in approximately 4800 records in the Section on Dermatology and Syphilology in the Mayo Clinic. 2. Pernicious anemia may be seen in association with syphilis, but no case exhibiting an incontestable etiologic connection has appeared in our records. 3. One patient with the clinical picture of pernicious anemia and a doubtful syphilitic infection has been apparently well two years as a result of treatment. 4. Pernicious anemia in the apparent absence of syphilis may yield a positive serum Wassermann reaction. 5. Mercury by inunction, used alone, produced an unfavorable reaction in four of nine patients with anemias who had previously improved under arsphenamin, but all had primary anemia and subsequently showed evidences of a relapsing unfavorable course. 6. We believe, therefore, that in syphilis with anemia mercury should be used with caution, especially if the picture suggests the primary type. 7. Five of thirteen patients with primary anemia improved under arsphenamin. Of these, two who improved and three who did not, have demonstrable syphilis. 8. Five of thirteen patients with primary anemia became worse under arsphenamin; of these two had syphilis. 9. Five of twelve patients with secondary anemia improved under arsphenamin treat-

ment. Of these only one who improved and five who did not had demonstrable syphilis. 10. Only one of twelve patients with secondary anemia became worse under arsphenamin. 11. In our experience, then, arsphenamin has been much more effective in secondary anemia than in primary anemia, but curiously disappointing in secondary anemia with associated manifestations of syphilis. 12. Twelve of sixteen patients improved under transfusion, four of them after arsphenamin had failed. Two of these patients showed temporary improvement and three others died notwithstanding the improved blood picture. The effect of transfusion could only be judged with difficulty because of the conditions under which it was employed. 13. In four of sixteen cases transfusion was without effect. 14. Transfusion should be a preliminary to arsphenamin when the hemoglobin is below 20 per cent. 15. Reactions to arsphenamin injections must be carefully avoided since they may produce an alarming drop in hemoglobin. 16. No satisfactory rule for determining which case would improve on treatment for syphilis and which case would not, could be arrived at. In general half the cases may be expected to improve. 17. The degree of improvement is not necessarily proportional to the demonstrability of syphilis. The pernicious anemia associated with undoubted syphilis which we have seen has run the ultimate course of pernicious anemia regardless of treatment for syphilis. 18. Hemoglobin estimations alone are not sufficient to indicate the progress of the patient. The hemoglobin may rise and the number of erythrocytes fall at the same time. 19. Arsphenamin treatment is safe if carefully used in anemia and should be employed in patients with undoubted evidence of the disease, and, as a therapeutic test, when reasonable suspicion of its presence exists. 20. Transfusion must remain the ultimate resort in primary cases, and in those cases associated with syphilis in which arsphenamin has failed, even in the presence of syphilis, the best effect will be secured by both together.—*American Journal of the Medical Sciences*, November, 1921.

PAEDOLOGY.

Conducted by C. SIGMUND RAUE, M.D.

THE CHEMISTRY OF MILK CURD MODIFICATION IN INFANT FEEDING.—The data presented by Robert Wood Terry in this paper are based on experiments in vitro and the deductions and recommendations are purely theoretical and are not presented as clinical facts. The author thus summarizes his findings:

The object in modifying cows' milk is due to the large difference in the physical condition of the curds from it and human milk. The caseins from the two milks probably are identical. Milk is coagulated by the combined action of rennin and calcium-ions, each acting independent of the other. Freshly formed curds have a powerful cohesive property, which property is rapidly discharged. Diluting the milk with water modifies the curd by decreasing the concentration of the active masses. Gruels or cereal decoctions act as protective colloids by virtue of the gelatinized starch present. Sugars, except lactose, have little action on the character of the curd. Lactose seems to favorably modify it. Boiling the milk profoundly alters the character of the curd by the removal of calcium salts

by scum formation. Citrates modify milk curd formation by fixation of calcium-ions. All alkalies act by precipitating calcium salts; thereby reducing the concentration of one of the active masses. Sodium or potassium hydroxides are desirable modifying agents but their purchase must be attended with care. Lime water acts like all other alkalies by precipitating calcium. The curd from lime water has very desirable properties. Milk of magnesia has practically the same effect on curd formation as lime water, but its action is slower.

No single method of modification produces the ideal curd. This can only be accomplished by a combination of dilution to the proper caseinogen concentration, the addition of a citrate to establish the correct calcium-citrate ratio, the adjustment of the mineral constituents, the addition of an alkali to reduce the acidity and properly stimulate gastric secretion, and by the addition of a protective colloid to establish the correct casein-lactalbumin ratio.

Before these combinations can be studied, certain mechanical defects in artificial stomachs must be overcome and then the data obtained can be applied to clinical experimentation and then simplified for practical application. Until these matters are solved, the modification of milk coagulation will remain as it is on an unscientific and unsatisfactory basis.—*Archives of Pediatrics*, August, 1921.

A TREATMENT FOR COLIC IN BREAST-FED INFANTS.—C. G. Grulee, emphasizes the fact that colic should primarily be regarded as a symptom of overfeeding. As a rule, this means overfeeding of the breast milk as a whole; but occasionally it means that the food which the child obtains is too rich in fat. Colic is practically always accompanied by two symptoms on the part of the intestinal tract: pain and accumulation of gas. The important bacterial process that takes place in the bowel is, of course, fermentation. It would seem a logical procedure to attempt, if possible, first to change the character of the fermentative processes within the bowel, and, secondly, to reduce fermentation by favoring putrefaction. A treatment which has been repeatedly tried out and which has proved successful, not only in the author's practice, but also in that of his colleagues, is this:

Morning and evening, these children are given about 5 c.c. of the liquid culture of active lactic acid bacilli, and each breast feeding is preceded with a gram of powdered casein. There is, of course, no difficulty in administering the liquid culture of the lactic acid bacilli; but powdered casein is hard to use. In the first place, it is quite difficult to get pure casein on the market. There are proprietary combinations of casein which can be used, and it is possible to obtain pure casein if sufficient search is made. The ordinary casein of commerce is, however, not to be used.

Even though the powdered casein is obtained, it is not at all soluble by ordinary means, and hence it is necessary to make a paste and place this on the back of the infant's tongue. If it is impossible to obtain the powdered casein, one may carefully skim milk and take the curd of the milk. The quantity of curd to be used before each nursing is approximately that obtained from an ounce of skimmed milk.

One advantage of this treatment is that ready co-operation of the mother is usually obtained when she learns that the treatment consists

in giving the child some extra food. One should not expect that treatment of this sort will bring results at once; but it is unusual for a case of colic to resist this treatment for longer than a week or ten days, and usually the benefit begins to appear within twenty-four to forty-eight hours.

Another type of colic which is rather frequently encountered is that due to a deficient quantity of breast milk. If the infant has colic under these circumstances, the best food for supplementing will undoubtedly prove to be albumin milk.—*Jour. Amer. Med. Asso.*

ENDOCRINOLOGY.

Conducted by AUG. KORNDORFER, JR., M.D.

ON THE PITUITARY ACTIVE PRINCIPLES AND HISTAMIN.—H. H. Dale and H. W. Dudley, *J. Pharmacol. and Exper. Therap.*, 18-27, Aug., 1921. The writer concludes that if histamin is present in pituitary extract, it is in such minute quantities that its chemical identification is impractical and that no reason exists at present to establish any relationship between these two substances.

VISUAL DISTURBANCES IN FROELICH'S DISEASE.—E. Poyales, *Arch. de oftal. hispano-am.*, Madrid, June, 1921.—Some very interesting observations are made in connection with hypophyseal diseases. It is claimed that visual disturbances occur in 50 per cent. of these glandular troubles. The following functional alterations are enumerated: Changes in monocular visual field; bi-temporal hemianopsia; homonymous hemianopsia; modification in blind spot of Mariotte; disturbance of stereoscopic vision; alterations in binocular vision; macular symptoms. Optic neuritis, postneurotic optic atrophy, disturbances in intrinsic and extrinsic muscles are mentioned as organic findings in this class of cases.

THE HEART IN THE EXPERIMENTAL HYPERTHYROIDISM WITH SPECIAL REFERENCE TO ITS HISTOLOGY.—Hirotoshi Hashimoto. *Endochinology*, Vol. 5, No. 5, p. 579. Hashimoto in his conclusions and summary states that toxic doses of thyroid cause enlargement of the heart and the appearance of myocarditis with accumulations of "histiocyte" cells (Kiyono) in circumscribed areas between muscle fibres and in the neighborhood of the vessels. There may be more or less destruction of muscle fiber in limited areas adjoining the larger areas of myocarditic changes. The heart changes are closely related to those shown to exist in individuals suffering with rheumatism, and also resemble the changes found in the goitre heart. The author concludes with the following statement: "This evidence lends support to the theory that the cardiac disturbances associated with goitre are due to thyroid intoxication, and further, to an excess of thyroid secretion." (Experiments conducted in the laboratory of Prof. K. Miure's medical clinic).

INTERNAL SECRETIONS AS CONCEIVED FROM THE POINT OF VIEW OF THE PRACTICAL PHYSICIAN.—D. M. Kaplan, *New York M. J.*, 113, 227-230, 1921. In this article dealing with the author's familiar subject of endocrine trop-

isms several clear-cut epigrammatic statements are made. He claims that the thyroid maintains equilibrium among the endocrine organs: it being an "equilibrizer" of the human organism. The pituitary controls dimension; the adrenal system is the source of energy. The gonads "insure the preservation of the race, being so endowed by nature and through them the ego of man is conscious of his immortality." "More than one living man has been cured of his so-called incurable and manifold complaints by the judicious administration of ovarian extract." Kaplan believes that the diseases we contract or acquire to a great extent are controlled by the make-up of the individual which is determined by the action of the endocrines. He claims that the infectious diseases of childhood fix the tropism of the pathocrine constitution.

TWO REMARKABLE CASES OF TESTICLE IMPLANTATION.—G. F. Lydston, *New York M. J.*, 113, 232-233, 1921. The author cites two cases, one of hypopituitarism with feminine secondary sex characteristics and infantile genitals, and the other a case following castration of acquired feminine characteristics, alteration of voice and loss of sexual power. Both cases were markedly improved after implantation of testicle substance. The author believes that the results can be maintained by repeated implantations.

THE EFFECT OF THYMUS AND MAMMARY ON MENSTRUATION.—A. Jacoby, *New York M. J.*, 113, 243-244, 1921. In 53 cases which was 75 per cent. of all cases considered the author noticed a marked decrease in the amount of blood lost during the menstrual period. Five grain doses were given three times a day over a period from one to six months. Thymus alone did not give the desired results in the four cases in which it was tried. (Mammary and pituitary either anterior or whole may often give the same results.—(K.)

CUTANEOUS CHANGES IN THE TOAD AFTER HYPOPHYSECTOMY.—L. Giusti and B. A. Houssay, *Rev. Assoc. med. argent.*, 34:96, Buenos Aires, June, 1921. After the removal of the hypophysis those parts of the skin which were green mostly became bronze which gradually became black and the sections which normally were white or golden became grey or dark brown. Trophic ulcers of the cornea and nares were also observed.

THE GLANDS REGULATING PERSONALITY.—L. Burman, MacMillan Co., 1921. The author in this new book concisely states some facts which are of interest to all:

"1. *Thyroid.*—Gland of energy and production — controller of growth of specialized organs and tissues—brain and sex.

"2. *Pituitary.*—Gland of energy, consumption and utilization—continued effort. Growth of skeleton and supporting tissue (Anterior lobe). Nerve cell and involuntary cell, brain, sex tone (Posterior lobe).

"3. *Adrenals.*—The gland of combat. Brain growth—one development of sex glands (Cortex). Energy for emergency situations (Medulla).

"4. *Pineal.*—Brain and sex development—adolescence and puberty—maturity.

"5. *Thymus.*—Gland of childhood.

"6. *Interstitial Glands of Ovary and Testicles*.—Secondary sex traits.

"7. *Parathyroids*.—Controllers of lime metabolism—excitability of muscle and nerve.

"8. *Pancreas*.—Controller of sugar metabolism."

ROENTGENOLOGY

CONDUCTED BY WALTER C. BARKER, M.D.

DIAPHRAGMATIC HERNIA: ITS CLINICAL ASPECT FROM TRAUMA IN CHILDREN.—Truesdale states that hernia of the diaphragm is one of the concealed deformities which Roentgenology has exposed for study and cure. This condition is no longer considered rare, and the author gives a résumé of the literature on the subject from the first description in 1610, by a French surgeon, Ambrose Paré, until the present time. He also reports two cases of the traumatic variety.

This condition is described according to the causative factors, whether they be congenital or acquired. When it is congenital the stomach or intestines, or both, pass into the thorax through one of the pleuro-peritoneal passages in the diaphragm. If there is a congenital defect, it is likely to be where the different segments of the diaphragm meet, such as the foramen Morgagni anteriorly, or in the quadrilateral space posteriorly. The congenital absence of fibrous or muscle tissue in the dome of the diaphragm, will produce the condition known as eventration in which case the serous membrane alone forms the partition between the cavities of the pleura and peritoneum. This condition is not hernia and can only be differentiated by fluoroscopy. The acquired variety may occur from stab wounds, fragments of shells or in children, from being run over by heavy vehicles. The symptoms depend upon the degree and type of hernia. In the congenital variety where the opening is small, there may be few or no symptoms. In the acquired variety during the first twenty-four to forty-eight hours, there is severe shock due to collapse of the lung and the transposition of the abdominal organs which act as foreign bodies in the thorax. If the patient survives the shock, there will be intermittent attacks of digestive disturbances with cyanoses and cough. In all traumatic cases in which the diaphragm is not repaired, there will come a time when there will be obstruction either in the stomach or intestines. This may not occur for several years.

The physical signs depend upon the condition of the colon or stomach. If the stomach is filled with food, the physical signs will be the same as a pleurisy with effusion; but if there is only gas in the stomach, the signs will be like those due to a pneumothorax. After an injury and when physical signs are present over the thorax, a Roentgen-ray examination should always be made with the opaque meal to outline the position of the stomach and colon.—*Journ. of the Amer. Med. Assoc.*, Sept. 24, 1921.

A NEW ROENTGEN-RAY SIGN OF ULCERATING GASTRIC CANCER.—Carman describes a new Roentgen-ray sign for making the diagnosis of ulcerating gastric carcinoma. The microscopic appearances of the pathological specimen of malignant ulcer, is one with elevated irregular overhanging margins, and a ragged floor covered with a mucilaginous exudate.

When these ulcers appear on the lesser curvature above the incisura angularis, they have a crater the cross section of which is shaped like a meniscus with its concavity toward the lumen of the stomach. If the ulcer is below the incisura angularis, the convexity of the crater will be toward the lumen of the stomach.

By making pressure upon the stomach during the fluoroscopic examination, the barium meal may be thinned out so as to show the crater when the ulcer is situated upon the posterior wall of the stomach. The crater will then appear as an irregular round dark spot surrounded by a ring of less density, and if no niche is present in the oblique view, it is probable that the ulcer is of this particular malignant type. The important characteristic point in diagnosis, is the absence of the niche. This diagnostic sign is limited to ulcers having a crater of two to five centimeters or more in diameter.—*Journ. of the Amer. Med. Assoc.*, Sept. 24, 1921.

THE DIAGNOSIS OF PRIMARY TUMORS OF THE LUNGS.—Christie states that primary tumors of the lungs are mostly malignant; the benign variety being exceedingly rare.

Primary carcinoma is more common than is suspected. In 1912, Adler reported 374 cases which were proven by pathological section. In 1918 McMahon and Carman reported 460 cases.

The symptoms are few, cough being an early one and most persistent. There is also a gradual increasing dyspnea, and some vague discomfort in the region of the hilus. In some cases, hemoptysis and fever are present. The Roentgenograms show an infiltration near the hilus, which is roughly circular, with the edges shading off into the surrounding tissue, and some radiating projections extending into the lung shadow. Around the tumor shadow, there is a less dense homogeneous one, which is due either to a congestion of the tissue around the tumor, or to a partial atelectasis caused by some stenosis of the branches of the bronchus. There may be shadows of some nodules beyond the primary growth, and in the miliary type, these shadows of nodules will be scattered throughout the lung.

The shadows of tumors must be differentiated from those of bronchiectasis, chronic pulmonary abscess, encysted empyema, pulmonary infarct metastatic malignancy, pneumonic type of caseous tuberculosis, gumma, mediastinitis, and certain inflammatory processes about the hilus.—*Am. J. Roentg.*, March, 1921.

X-RAY TREATMENT OF PULMONARY TUBERCULOSIS.—Wilkinson states that since x-ray therapy has proven of value in the treatment of tuberculosis of the lymph nodes, bones, skin and peritoneum, and also for such diseases of the lungs and pleura, as unresolved pneumonia and adhesions following plastic pleurisy, that it might be considered and more generally used in chronic pulmonary tuberculosis.

He quotes largely from his personal observations of the cases treated by Dr. J. B. Gibson, who was one of the pioneer workers in x-ray therapy for pulmonary tuberculosis, and also from the work of Russ and others. These authors agree that it is not necessary to treat the tuberculous areas of the lungs by direct irradiations, but that raying any portion of the

body that will cause an increase in the number of lymphocytes, will be followed by improvement of the tuberculous processes.

For the past seven years, Wilkinson has been treating pulmonary tuberculosis by the x-rays, and from his experience, believes it to be a valuable therapeutic agent in these cases.—*Am. J. of Roentg.*, May, 1921.

DERMATOLOGY

CONDUCTED BY RALPH BERNSTEIN, M.D., F.A.C.P.

MATCH-BOX DERMATITIS.—Herbert Stranz reports this form of dermatitis as having been seen frequently during the last five or six years in men. It begins typically on the anterior surface of the left thigh and adjacent abdominal and hip regions and spreads to the backs of both hands and face. It is due to phosphorus sesqui-sulphide used to make the scratch surfaces of match-boxes. When it is carried in the trouser boxes the moisture of the body vaporizes it and it reaches the skin of the thigh, whence it is transported by the hands to other parts of the body. It usually occurs in smokers who carry these match-boxes. The clinical picture varies with the severity and age, and also with the sensitiveness of the individual; it may resemble erysipelas, or may show exudation with crust formation, often affecting the face and eyelids. It may cause marked edema or resemble chronic lichen of Vidal. The symptoms are severe itching and burning pain. The treatment requires removal of the cause and application of a 1 to 8 per cent. boric or watery solution of resorcin, mild salves, or dry painting. Good results were obtained with roentgenization for the itching.—*Munch. med. Wchnschr.*, May, 1921.

A COMPARATIVE STUDY OF SYPHILIS IN WHITES AND NEGROES.—Racial differences in syphilis, according to Ernest L. Zimmermann, have been studied chiefly in the former German colonies, the North African possessions of the French, and in the negro of the United States. Pertinent are also Neiser's experience among Malays and Chinese, von Düring's statistics from Asia Minor, Lambkin's report on syphilis in Uganda.

In Zimmermann's paper are discussed the results obtained in 1,843 cases treated in the syphilis department of Johns Hopkins Dispensary (charitable clinic), the distribution being: 596 white males, 521 colored males, 297 white females and 429 colored females. In many of the negroes there was admixture of white blood, which should be taken into consideration.

In respect to syphilitic infection there exist inherited biologic differences, the author concludes, between white and negro patients. The negro develops intense reactions on the part of cutaneous and osseous structures and is relatively free from tabes and paresis. In white patients, syphilis more frequently runs its course with slight or no skin manifestations, but there is a greater tendency toward the eventual development of tabes or paresis.—*Arch. Dermat. and Syph.*, July, 1921.

RINGWORM OF THE NAILS.—Robert S. Hodges offers a preliminary report of sixteen cases of onychomycosis, with a cultural study of twelve of these cases due to trichophytons. The entire absence of a history of

ringworm of the scalp associated with any of these cases would seem to exclude the probability of endothrix trichophytosis as a cause. Eleven of the cases were due to large-spored ectothrix trichophytosis, as indicated by finding in associated skin lesions lanugo hairs attacked by a fungus apparently of this variety, and by their rapidity of development on culture mediums and other cultural characteristics. The prevalence of onychomycosis in the United States is estimated as about one case to 500 of population (being greater in the Southern States). This is ten times greater than the prevalence reported (by Foster) among foreign immigrants at Ellis Island.

Treatment consisted in persistent applications of Whitefield's ointment ("benzoic acid 4 parts, salicylic acid 2 parts, petrolatum 30 parts") which proved effectual when used for ringworm on hands and feet (Ormsby and Mitchell). In order to reach the fungus the nails were repeatedly scraped after applying a solution of about 10 per cent. potassium hydroxid. The ointment was applied to the finger nails at night, on cloth with adhesive strips. In the case of toe nails, applications could be kept in constant contact and this softened the nails, rendering the potash solution and scraping unnecessary, but trimming was done. If irritation became too severe, the ointment was discontinued for a few days, or was diluted with petrolatum. Normal growth of nail was regained in four months.—*Arch. Dermat. u. Syph.*, July, 1921.

OPHTHALMOLOGY.

Conducted by WM. M. HILLEGAS, M.D.

ETIOLOGY OF UVEITIS.—It is generally considered at the present time that outside of cases of direct injury to the iris, ciliary body or choroid, there is no such thing as idiopathic uveitis. The consensus of opinion as to pathogenesis seems to favor the toxic theory, although some authorities believe there is an actual bacterial invasion. Syphilis has been relegated to a position of minor importance. Uveal disease from old gonorrheal infections has not been given the consideration its importance deserves. Many of the cases formerly considered rheumatic, are gonorrheal in origin. Literature abounds with reports of cases of iritis, iridocyclitis and choroiditis of varying severity which are cured or greatly improved by removal of dental sepsis, or of foci of infection in the tonsils or accessory nasal sinuses. Attention is called to the possibility of the uveal tract being the seat of disturbance as a result of protein sensitization from ingested food. Tubercular uveitis is practically always secondary to some focus in the body. Uveitis is reported as a complication, infrequent to be sure, in many other diseased conditions of the system. In the presence of a definite etiological diagnosis, which often requires great care to establish, recovery is often remarkably slow, whereas the detection and removal of the real cause is usually followed by speedy relief.—*Black., Amer. Jour. of Ophth.*, September, 1921.

EYE POINTS TO BE CONSIDERED IN SYPHILIS.—Dean W. Myers, (*Jour. of O., O. and L.*, July, 1921.) Frequency of involvement of the eye in syphilis must ever be remembered. A positive Wassermann should always

call for an examination of the eye and careful follow-up observations. Failing vision of obscure origin, no matter how slight should call for Wassermann tests, of both blood and spinal fluid. All irregularities of the pupils should be carefully investigated and watched.

The ophthalmologist is often the first to diagnose the presence of a *tabes* that might not manifest ataxic signs for many years, therefore the ocular symptoms are of paramount importance, irregular pupils, or the typical Argyll-Robertson pupil, paralysis of the motor oculi, and optic atrophy. Optic atrophy attacks about 10 to 12% of cases of *tabes* and almost inevitably results in total blindness. The importance of early diagnosis is due to the fact that when the disease has become apparent and definite tissue changes have taken place, there is little hope for recovery, particularly so far as vision is concerned, although the other symptoms of *tabes* may improve. Myers thinks that granting a normal optic nerve at the beginning of treatment, Salvarsan may be used in conjunction with Mercury with a reasonable expectancy of a favorable result. The appearance of an optic neuritis during a course of Salvarsan treatment should call for a cessation of the arsenical preparations.

Nicolau, (*Clin. Ophth.*, vol. 23, p. 676.) states that inequalities of the pupils frequently occur in the primary stage of syphilis, as early as the fourth week from the onset of the primary sore, and that it probably indicates some involvement of the nervous system. While persistent inequality need not necessarily be regarded as a menace for the patient's future, it is a symptom that should be carefully watched. Lowery and Benedict, (*J. A. M. A.*, v. 75, p. 1093.) agree with this view, but feel that irregular pupils are of more diagnostic import than unequal pupils in neurosyphilis.

GLAUCOMA.—Elliot, who has perhaps done more research work in this disease than any other ocular surgeon, in reviewing the subject in the *British Medical Journal*, states that the chief diagnostic symptoms are grouped under general heads. *Headaches*, 1. A passing morning headache; not all morning headaches are however indicative of glaucoma, many result from eye strain. 2. Headaches after near work are frequent in middle life. If all refractive errors are corrected and muscle imbalance remedied and presbyopia provided for, and the headaches still remain, glaucoma should be remembered as a possible causative factor. 3. In an elderly patient suffering with severe headache, associated with vomiting, think of glaucoma. *Loss of Sight*. Gradual loss of sight without any apparent cause. (a) The rapid increase of presbyopia. (b) The visual field gradually shrinks. (c) The light sense becomes reduced.

He outlines the methods of diagnosis as follows: 1. The ophthalmoscopic evidences of increased tension, the cupping of the disc, with venous and arterial pulsation. 2. Tonometry to measure the increased tension. 3. Perimetry to measure the shrinkage of the fields, a most delicate but reliable test. 4. Examination of the light sense. 5. Measurement of the diameter of the cornea.

OCULAR DISEASES OF NASAL ORIGIN.—Patteron, of Colorado Springs, (*Amer. Jour. of Ophth.*, July 1921.) treats this subject in a conservative manner; he traces many cases of chronic conjunctivitis to morbid en-

donasal conditions, as well as many diseased conditions of the lacrimal apparatus. But he adds that all such conditions, including follicular conjunctivitis, must be treated by local ocular means as well as hygienic, tonic treatment and by the prescription of proper glasses. The frontal sinus but rarely is a causative factor in ocular diseases, no doubt due to its more perfect natural drainage, as well as to the fact that the severe pain of the acute onset of frontal sinus inflammation or infection compels the patient to seek early relief, and the location of the pain making the diagnosis fairly easy, and the means employed by a rhinologist in shrinking the tissues about the frontal duct being fairly sure. However, there are undoubtedly diseases of the optic nerve, sometimes a papillitis, more frequently a retrobulbar neuritis due to causes located in the posterior ethmoid cells and the sphenoid cavity, and thorough investigation should be conducted in all such cases. Some cases of vitreous opacities, a non-specific hyalitis, are cured by operation on the ethmoid cells, but Patterson does not go so far as does Thomson of New York, (*Ibid.*), who advocates operation on the posterior ethmoid and the sphenoid in all cases of vitreous opacities and in functional disturbances of the optic nerve which manifest themselves by partial central scotoma with color blindness in the scotoma, but without the slightest appearance of optic nerve disease discernible by the ophthalmoscope. In the short series of cases Thomson reports, no evidence of sinus disease was found during the operation; he suggests that the disturbance is possibly mechanical rather than pathological (Probably the good resulting from the operations was due to psychic effect.). Stenger (*Med. Klinik*, Vol. 16, p. 221.) carefully reviews the subject and also is conservative as to operation, claiming much good from cocain in the nose with establishment of drainage from the sinuses, and advocates close relationship between oculists and rhinologists.

SURGERY

CONDUCTED BY J. D. ELLIOTT, M.D.

MAGNESIUM SULPHATE SOLUTION AS AN AID IN ANESTHESIA.—Gwathmey recently advocated pre-operative hypodermoclysis of from 200 to 400 c.c. of 4 per cent. chemically pure magnesium sulphate solution as an aid to nitrous oxid-oxygen or ether anesthesia. This method was tried at St. Luke's Hospital, Chicago, in thirteen patients. In all of these less than the usual amount of general anesthetic was required and post-operative symptoms were slight. Unfortunately, one of the last three patients operated on died after sixty hours with symptoms of acute poisoning. Curtis reports the details of this case and believes from the findings, together with evidence from previous experimentation on animals, that magnesium sulphate solution sometimes produces profound changes in the liver and cannot be considered a safe anesthetic for general use.—*Jour. Am. Med. Asso.*, Nov. 5, 1921.

IS PAGET'S DISEASE OF THE NIPPLE PRIMARY OR SECONDARY TO CANCER OF THE UNDERLYING BREAST?—Kilgore found four undoubted cases of Paget's disease in 1500 cases of mammary disease, 1100 of which were cancer. The author discusses the various theories as to the etiology of

this disease and its relationship to carcinoma of the breast and reports in detail the history of the four cases. In addition he reports the histories of two cases in which ulcer of the nipple was mistaken for Paget's disease. In both the ulcer was excised but carcinoma of the breast developed later, although no tumor was made out at the time of the primary operation.

Paget's disease should be limited to those lesions presenting the typical histology: (a) epithelial hypertrophy; (b) subepithelial roundcell infiltration; (c) Paget's cells.

The cases reported emphasize the importance of removing the entire breast for any chronic persisting nipple eczema or ulcer, regardless of the apparent presence or absence clinically of deeper breast changes. The decision in regard to axillary dissection should depend on the pathologic condition of the breast, not in frozen section diagnosis between Paget's disease and other eczemas.

Three of the cases reported demonstrated that Paget's disease is usually primary to cancer of the breast; the fourth case, however, points to a reversal of this order, the cancer apparently originated first and was followed by Paget's disease of the nipple.—*Archives of Surgery*, Sept., 1921.

PYLOROSPASM IN ADULTS: ITS MEDICAL AND SURGICAL TREATMENT.—Finney and Friedenwald, in summing up a paper on this condition, point out that pylorospasm is a complex nervous phenomenon, the exact etiology of which has not been satisfactorily established. Experimentally the fact has been definitely demonstrated that pylorospasm may be produced in rabbits by stimulation of the vagus and inhibited by stimulation of the splanchnics. That there is a definite association between this condition and the endocrine system is indicated by the fact that the spasm may be brought about by injection of certain extracts of the thyroids and parathyroids and inhibited by injection of an extract of adrenals. On the other hand there is but little question that changes in tonus or peristalsis are of great importance in its production.

Pylorospasm may exist in one of three types: the neurotic, the irritative and the reflex forms. In the largest percentage of cases this condition is secondary to some irritative lesion in the stomach or is reflex from disease of some other organ. Many of these cases are promptly and completely relieved by removal of the cause, chronic appendix, gall-stones, etc. There exists, however, a purely neurotic form without any demonstrable lesion.

The condition can usually be recognized clinically by a careful study of the case. In the majority of the cases slight, if any, pathologic changes can be demonstrated about the pylorus at operation as the general anesthetic usually completely relaxes the pyloric spasm. In advanced cases one may observe varying grades of hypertrophy in the pylorus and the pyloric antrum of the stomach.

The symptoms of pylorospasm are rather characteristic. These consist of pains of the hunger type appearing two or three hours after meals, which are relieved by emptying the stomach of its contents as well as by the ingestion of food; of contractions of the stomach leading to tumor formation, which disappear as the spasm relaxes; of symptoms of intermittent stagnation and hyperacidity.

The greatest aid afforded in the recognition of pylorospasm is by roentgenology, by means of which the nervous as well as the organic forms may usually be differentiated.

In the treatment of this affection medical measures should always be given a careful trial; if it be secondary to other abdominal conditions the primary disorder should, as far as possible, be overcome before treatment is directed toward the spasm. The treatment consists of overcoming the primary neurasthenia. This is most satisfactorily accomplished by means of dietetic and hygienic measures. During an attack the best results are obtained by means of hypodermic injections of morphia with atropin following a thorough lavage of the stomach. The drug most useful in the treatment of this affection is atropin given in full doses. When medical measures fail to give the desired relief, pyloroplasty theoretically is the operation of choice and practically gives most satisfactory results.—*Am. Jour. of the Med. Sciences*, October, 1921.

UROLOGY

CONDUCTED BY LEON T. ASHCRAFT, M.D.

DIVERTICULA OF THE URINARY BLADDER.—W. E. Lower, *Archives of Surgery*, 1921, iii, 38.; Englisch has classified diverticula of the bladder into true and false types. True diverticula contain all layers of the bladder wall while false diverticula contain only the mucous membrane. Diverticula are usually located near the ureteral openings and may be single or multiple. The etiology is in dispute but it is the consensus of opinion that certain underlying congenital factors predispose to their formation, and that they are aggravated by obstruction or increased intravesical tension.

The diagnosis is made principally by means of the cystoscope, the X-ray, contrast cystograms and cystostomy. Judd emphasizes the importance of looking for diverticula at the time of prostatectomy. The symptoms are indefinite, but persistent pyuria with urinary difficulty and frequency, especially when the urine is very foul, is sufficient to arouse suspicion as to the presence of the condition.

In the author's opinion treatment by suture of the orifice without excision (Pousson) and by enlarging the orifice (Pousson and Chute) is insufficient. The two-stage operation of prolonged primary drainage with stretching of the orifice and secondary excision is illogical. Lower's method and that used most commonly by Young, Hinman, Howard, Squier and others is radical excision with removal of the underlying cause of obstruction. The intravesical approach is generally preferred especially for the intraperitoneal retrovesical, and subtrigoneal types. Young's suction and traction method is excellent for small diverticula; also the use of intravesical closure and extravesical drainage with prostatectomy or the punch operation, as indicated.

The author employs a vertical suprapubic extraperitoneal approach, and if the diverticulum is large, he converts it into a tumor by packing it with gauze. He then excises it and closes the wall in two layers, invaginating the suture line. The prevesical space is drained and an inlying urethral catheter is left in place for several days. When necessary, ureteral transplantation is done.

ONE HUNDRED CONSECUTIVE PERINEAL PROSTATECTOMIES.—A. B. Cecil, *California State Journal of Medicine*, 1921, xix, 287. In this review of one hundred consecutive perineal prostatectomies Cecil found that 90 per cent. were malignant. The youngest patient was 52 years of age and the eldest 90 years and 4 months. Eighteen per cent. had had trouble for ten years and 10 per cent. had had trouble for from eleven to fifteen years.

Cecil states that the striking feature of the entire series was that at the time of their admission to the hospital 50 per cent. of the patients sought relief on account of complete retention; 55 per cent. suffered considerably with pain which was usually associated with urination; five patients had hematuria; and five had incontinence of urine, due to overdistention.

Preliminary treatment consisted of catheter drainage as the author does not consider suprapubic drainage advisable as a routine measure because: (1) It is an operative procedure carried out when the patient is least able to stand any type of disturbance; (2) The suprapubic space is particularly susceptible to infection; and (3) the operation immobilizes the bladder. The drainage tube was removed on the second day and not replaced. There were two deaths, one in the benign cases and one in the malignant cases.

In 65 per cent. of the cases healing occurred within less than thirty days; in 25 per cent. in two weeks or less; and in four, between the fifth and ninth day.

Cecil claims that perineal prostatectomy offers as advantages a much lower mortality, a higher operability rate, a convalescence less than half as long as that following other procedures, and better functional results.

SARCOMA OF THE PROSTATE.—*American Journal of Surgery*, August, 1921: Sarcoma of the prostate is a disease worthy of report, because of its rarity. Maximilian Stern and I. Sidney Ritter, of New York, record the thirty-sixth of its kind found in the medical literature to date.

In 1839, the first case of sarcoma of the prostate was reported by Stafford. It was a melanotic tumor in a child five years of age.

Ewing states that sarcoma very rarely occurs in the prostate, and that many of the cases so diagnosed are of uncertain nature.

Kettle states that sarcoma of the prostate rarely occurs.

Thompson in 1858 found six cases of sarcoma of the prostate in the medical literature reported to that date.

Kaufman and Burckhardt both reported in 1902 that they were able to collect 24 cases of sarcoma of the prostate in medical literature to that date. Kaufman further states that of the 24, three occurred in infancy, seven in the first decade, and only seven between the ages of 30 and 70 years.

Bland-Sutton quotes Proust and Vian as having collected up to 1907, thirty-four case histories of sarcoma of the prostate, the youngest occurring in an infant five months old, the oldest in a man 73 years old. Of the cases reported, about 50 per cent. occurred in individuals under eight years of age.

Hugh Young, of Baltimore, in 1910, reported the thirty-fifth case occurring in an adult, which was of the mixed cell type.

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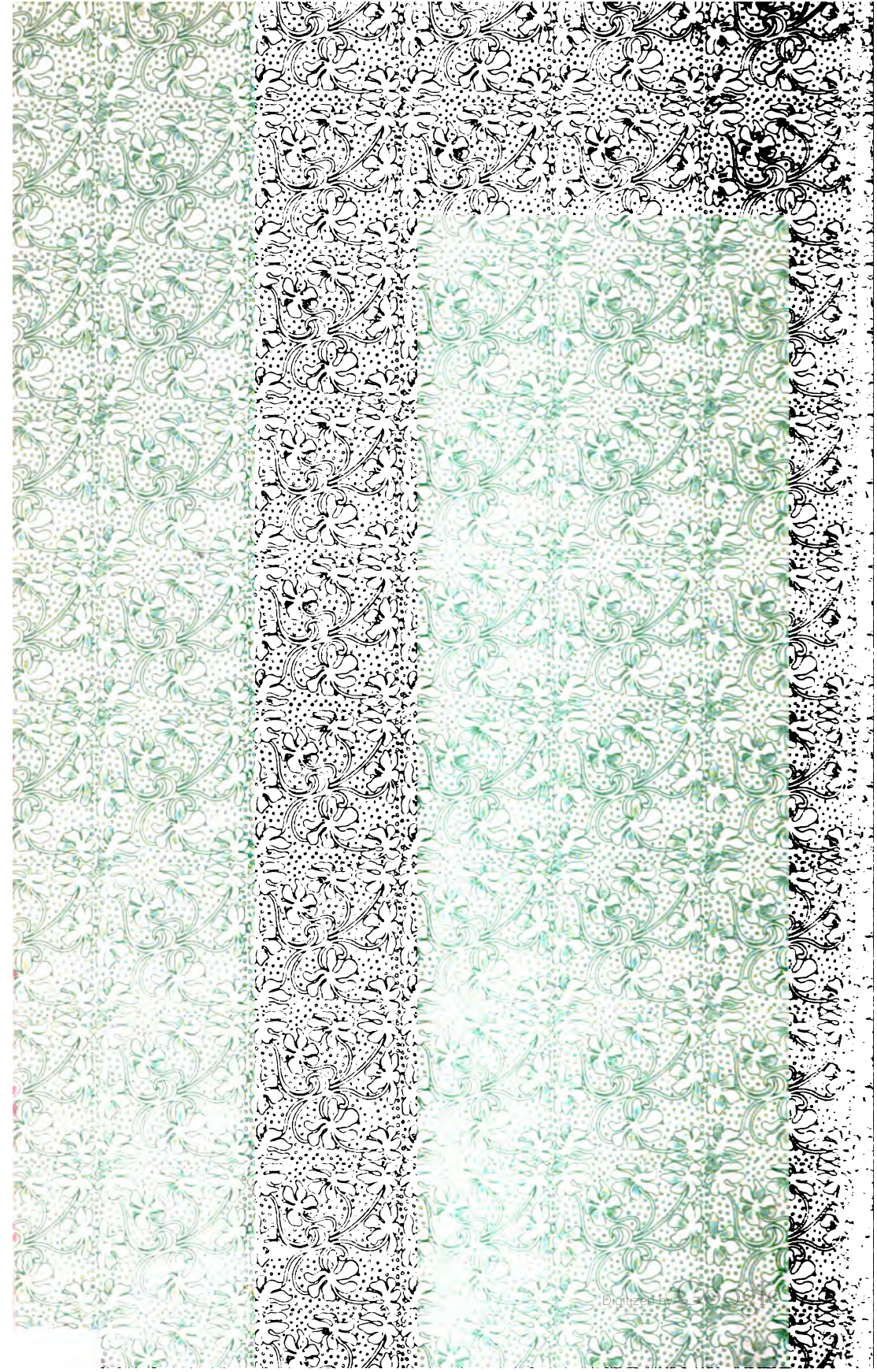
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